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A Climatic Handbook for Glacier National Park—with Data for Waterton Lakes National Park

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RESEARCH SUMMARY

This publication presents climatic details for the Glacier National Park-Waterton Lakes National Park area in northwestern Montana-Alberta; data and analysis mainly cover the Montana area. The content, including numerous tables and graphs, is intended to provide information to aid fire management planning and other wildland resource activities. Data are summarized and analyzed from year-round climatological stations, fire-weather stations, and additional sources. Weather and climatic elements are examined individually. In addition, combinations of temperature, relative humidity, and windspeed data are included for the fire season.

The data show some of the elevational and other topographic effects identified with mountainous areas. Despite large differences in average values, the data also show a general similarity—within the park boundary—in the normal annual regimes of the climatic elements; an exception occurs with windspeed. For example, November, December, and January are the heaviest precipitation months within most of Glacier Park, even though normal annual precipitation ranges from about 23 inches (585 mm) to 100 inches (2 500 mm) or more. July and August are normally the driest months of the year. The pattern differs—with relatively light winter (and annual) precipitation—on the plains immediately east.

High interstation correlations are found for afternoon temperatures; correlations are moderately high for precipitation amounts. A persistence tendency is indicated between late spring (May-June) and summer (July-August) maximum temperatures and precipitation, relative to normal, but not between the individual monthly values. Climatic trends or fluctuations during this century, examined by running means, show recent July-August 11-year rainfall amounts well above normal, while September-October was abnormally dry. Fire-weather statistics of afternoon temperature and relative humidity, if based on these recent summers, give a cooler and more moist picture than that of the longer term. Our climatic findings do not support some published explanations for the historically greater fire activity on the west side of Glacier Park. The east side, overall, has about as much precipitation accumulation and thunderstorm occurrence as the west side.

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INTRODUCTION

To its visitors, Glacier National Park, MT, offers a closeness to the marvels of nature. Although its alpine terrain features give the park its special character, the flora and fauna are also major aspects of Glacier. Here and in other lands under its administration, the U.S. Department of the Interior, National Park Service, is given the mission of preserving the area's natural state (in addition to providing for public use). In recent years, Park Service policy (Kilgore 1976) has come to recognize the historic, natural role of fire in shaping and maintaining the diversified wildland ecosystems. Fire management now seeks to allow some natural, lightning-caused fires to burn (within prescribed limits) and also to utilize planned ignitions—in contrast to the earlier efforts toward total fire suppression. Implementation of this new policy has been slow in Glacier Park, because of necessary concerns about public acceptance and safety, and lack of specific information to guide decisions. Interest has thus far concentrated on the more fire-prone west side of the park. A prescribed burn was successfully conducted near Polebridge in 1981; a second one in 1983.

Data needed for fire management are being obtained by research concerning fire history (Barrett 1983), fire-susceptible terrain (Key 1984), and prescribed burning. Cooperating with Glacier Park personnel in these studies has been the U.S. Department of Agriculture, Forest Service, at its Intermountain Research Station, Intermountain Fire Sciences Laboratory, Missoula, MT—together with Systems for Environmental Management, Missoula. Data used for planning also include those of weather and climate—for example, in establishing seasonal limits for prescribed burning. Climatic data can, in addition, establish a baseline for use in evaluating fire effects. These effects, such as postfire vegetative response, may be strongly influenced by the normal or abnormal extent of weather conditions in the ensuing months and years.

This publication, termed a handbook, is intended to fill some of the climatic data void. Though prepared largely as a reference for fire managers, the handbook includes data for other management and research activities within the park and adjoining areas. Thus, the content may also have applications relating to forest ecology, wildlife, hydrology, recreation, and to rangelands just east of the park on the Blackfeet Indian Reservation. The data coverage includes Waterton Lakes National Park, AB, part of Waterton-Glacier International Peace Park. The main coverage available, however, is for Glacier Park and adjacent Montana.

A brief climatic description of Glacier National Park, aimed toward the general public, was prepared by Dightman (1967a). The climate of Waterton Lakes National Park has been described by Poliquin (1973). In neighboring Rocky Mountain areas, Dirks and Martner (1982) present climatic details for Yellowstone and Grand Teton National Parks; they also refer to more extensive University of Wyoming project reports. A climatic report by Janz and Storr (1977) covers Yoho, Kootenay, Banff, and Jasper National Parks in British Columbia and Alberta. Local topographic and site effects on summer climate in a forest area southeast of Banff are described by MacHattie (1966, 1968, 1970).

The present handbook includes climatic details for the fire season, to 10-day resolution, together with the year-round pattern. In addition to graphs and tables appearing within the text, detailed summary tables and data listings are given in an appendix. The scope does not cover related or derived factors such as fuel moisture and fire-danger indexes. Because our objective is to present climatic information, detailed physical or technical explanations have been left to references. Sources for elementary background in weather and climate include Schroeder and Buck (1970); Critchfield (1974); Landsberg (1958); Reifsnyder (1980).

In discussing the climatic elements over the course of a year, this report will mostly follow the format of treating the elements individually. A description combining the elements by seasons is, however, included in the section, "Condensed Summary of the Climate."

DESCRIPTION OF THE AREA

Physical Features

The location of Glacier and Waterton Lakes National Parks is shown in figure 1. Covering a total area of 1,143,000 acres (462 500 ha) near and astride the Continental Divide and the Canadian-United States border (49th parallel of latitude), this land will also be referred to as Waterton-Glacier—the name of the International Peace Park established in 1932. Glacier, comprising 1,013,000 acres (410 000 ha), became a National Park in 1910; Waterton Lakes, with 130,000 acres (52 500 ha), began its preservation as a "Forest Park" in 1895 (Buchholtz 1974).

Figure 1.—Location of Glacier and Waterton Lakes National Parks (Waterton-Glacier International Peace Park) (stippled area), together with surrounding weather stations mentioned in text.

The basic geological history of this area starts with the Precambrian layers of limestones, mudstones, and sandstones—formed from sediments deposited in a sea-filled trough (called the Belt Sea) and intruded by magma. Subsequent events include: the uplift and folding of these layers during the mountain-building period that began about 75 million years ago; a fracture initiating the Lewis Overthrust Fault, on which a huge slab of rock ultimately slid about 40 miles (65 km) eastward and covered rock 1 billion years younger; and the processes of erosion by water and (within the past 2 million years) by glaciers, shaping the terrain to its present appearance. (See Dyson 1966, 1967; Alt and Hyndman 1973.)

The main drainage features and elevations of the highest peaks are shown in figure 2. No attempt is made to depict the complex and steep terrain contour pattern—available from U.S. Department of the Interior, Geological Survey, topographic maps. Elevations within Glacier Park range from about 3,110 ft (948 m) a.s.l. (above sea level) at the Middle Fork-North Fork Flathead River confluence to 10,466 ft (3 190 m) atop Mount Cleveland (fig. 3). Within Waterton Lakes Park, elevations range from just under 4,200 ft (1 280 m) to 9,646 ft (2 940 m) atop Mount Blakiston. The Continental Divide trends generally from northwest to southeast. It is formed mostly by the Lewis Range, which runs the length of the park from east of Waterton Lake, but also by the smaller Livingston Range (farther west) in the northern portion. Waterton Park lies entirely on the east side of the Divide, while 60 percent of the Glacier Park land area is on the west side. Waterton-Glacier contributes to three major drainage systems, and a triple divide exists south of St. Mary Lake—separating flows into Hudson Bay, the Gulf of Mexico, and the Pacific Ocean.

The present glaciers, numbering about 50 in Glacier Park, are not remnants from the great ice ages (the last one ending about 10,000 years ago), but instead are believed to have originated about 4,000 years ago—following an intervening warm period. These lesser glaciers (and others since melted) apparently reached their maximum extent in the 1850's (Carrara and

● Regular climatological station, year-round temp. and precip. ○ Precip. only.

⊗ Other year-round station (for research, etc.), data mainly from recording charts.

⊘ Precip. only. ◐ Temp. only.

• Fire-weather or seasonal station. ◦ Precip. only.

⊠ Storage precip. gage, annual or semi-annual readings.

◊ Snow survey course. ⊡ "SNOTEL" precip.

Figure 2.—Map of Waterton-Glacier Park area, showing drainage features (streams and lakes) and locations of stations providing data used in this report; symbols indicate type of station. Park boundary is shown by heavy line, Continental Divide by dashed line. Station elevations, and those of some high peaks, are given in feet. RS denotes Ranger Station; LO, Lookout; GG, Grinnell Glacier (gauges No. 1 and 2); GL, Grinnell Lake (elev., 4,925 ft). Two-letter abbreviations of snow courses are identified in table 27. Superscript F denotes formerly existing station (or station network); FP, former climatological station replaced by "Fischer-Porter" precipitation gauge.

Figure 3.—Mount Cleveland (capped by cloud), highest peak in Waterton-Glacier Park, at 10,466 ft (3 191 m); viewed toward southeast from Waterton Lake, September 1954.

McGimsey 1981). The drastic melting and retreat since that time, particularly during the 1920's and 1930's, is shown by the above authors and by Dyson (1966) and Johnson (1980). The largest glaciers, Grinnell and Sperry, now cover less than 300 acres (120 ha) each. Relation of this melting to climatic change or fluctuation was examined by Dightman (1952, 1956, 1967b). Although the rate of recession slowed considerably by 1950, and an advance of Grinnell Glacier was measured in 1951, the overall retreat continues.

Forests; Fires

Forests cover two-thirds of Glacier Park's land area (Kessell 1979). They occur mostly below an elevation of 7,000 ft (2 135 m)—limited by steep, rocky terrain as well as the climatic timberline. A contrast between forests on opposite sides of the Continental Divide has been noted by Habeck (1970), Robinson (1972), and Kessell (1979). The idealized elevational distribution of tree species (and forest community types) is complicated by local site differences and by the varying stages of succession following past fires.

Lodgepole pine (*Pinus contorta*) is widespread at lower and intermediate elevations. There is also much western larch (*Larix occidentalis*) and some western white pine (*Pinus monticola*) on the west side of Glacier Park. Climax species there include western redcedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*), found in the Lake McDonald vicinity—their easternmost extent in North America (Habeck 1968). Spruce (*Picea engelmannii* × *P. glauca* hybrid), Douglas-fir (*Pseudotsuga menziesii*), and subalpine fir (*Abies lasiocarpa*) are climax species in other west-side areas. Ponderosa pine (*Pinus ponderosa*), apparently seral, occurs near Polebridge. Near the eastern park boundary, the lodgepole pine joins a mixture of prairie, aspen (*Populus tremuloides*) groves, limber pine (*Pinus flexilis*), and Douglas-fir. This eastern area is well grazed by wildlife such as elk and deer and (beyond the park) by livestock.

The highest elevation forests, below the alpine meadows and Krummholz vegetation, are dominated by subalpine fir (*Abies lasiocarpa*), Engelmann spruce (*Picea engelmannii*), and whitebark pine (*Pinus albicaulis*).

Fire has long had an important role in shaping and maintaining the forest ecosystems and their attendant diversity. In what is now Glacier Park, natural (lightning-caused) fires appear to have been much more frequent in the western portion than on the east side. A simple, partial explanation is that about two-thirds of the forested area is located on the west side. From the time of Glacier's establishment in 1910 through the year 1968, 90 percent of 525 reported lightning-caused fires occurred west of the Continental Divide, with close to 50 percent in the Lake McDonald subdistrict (O'Brien 1969). In the northwestern part of Glacier, a three-century fire history by Barrett (1983) revealed frequent and sometimes extensive underburns followed by occasional stand-replacing fires. The replacement-type fires appear to be more typical and significant, however, for the overall park area (personal communication from Carl H. Key, geographer, National Park Service). As much as 90 percent of Barrett's 60,000-acre (24 000-ha) study area has underburned within the past 56 to 95 years—but little since 1930, in an era of strong fire suppression.

O'Brien (1969) found that 98 percent of Glacier's 1910-68 fires occurred between June 19 and September 19, with 30 percent in July and 51 percent in August. Nine percent (48) of the fires reached Class C size (10 acres [4 ha]) or larger, with 40 percent of these in July and 44 percent in August. Further analysis showed that 95 percent of the fires occurred at elevations below 7,100 ft (2 165 m) and about two-thirds on southern aspects. In a west-side area examined by Key (1984), lightning-ignition frequencies during 1910-82 indicated a greater susceptibility along certain ridge systems, at elevations below 4,000 ft (1 220 m), and on westerly and southwesterly aspects.

Memorable fires in Glacier Park include those in 1910, 1926, 1929, 1936, and 1967 (Robinson 1960; Habeck 1970). In the latter two years, fire swept eastward over the Continental Divide. The Heavens Peak Fire in August 1936, roaring down the Many Glacier Valley, completely or partially stripped about 7,500 acres (2 300 ha) (fig. 4). It burned the ranger station and other buildings but spared the hotel. A year earlier, a large fire affecting both Glacier and Waterton was stopped within about 1.5 miles (2.4 km) of the Waterton Park townsite. The new fire management policy of the National Park Service (Kilgore 1976) does, of course, continue suppression in such developed areas. Two large, wind-driven fires in late August 1984, on or adjoining the southwestern and eastern edges of Glacier Park, ended a 17-year period of relative quiet.

Figure 4.—Many Glacier area, 1954, 18 years after the Heavens Peak Fire. (A) Along trail to Iceberg Lake; Mount Wilbur and Ptarmigan Wall in background. (B) At campground, lodgepole pine regenerating, looking west toward Mount Wilbur and Swiftcurrent Pass (topped by cloud bank at left). The fire swept over this pass from west side of Continental Divide.

STATIONS; DATA; METHODS

Locations and elevations of stations utilized in this report are included in figures 1 and 2. The stations in figure 1 are (or were) primary daily reporting stations, located mostly at airports. Those shown in figure 2, in Montana, are of two main types: (1) the year-round climatological substations ("cooperative" stations) of the National Weather Service (formerly U.S. Weather Bureau) and (2) the seasonal fire-weather (or fire-danger rating) stations of the Forest Service and National Park Service.

Detailed temperature and precipitation summary tables are presented for three of the cooperative stations—Polebridge, Summit, and West Glacier (fig. 5), all located on the perimeter of Glacier Park. Data from West Glacier have been observed near the present Park headquarters since 1918; a continuous record dates from 1926. The Polebridge data, mostly complete from 1947 to the present, are from the mercantile-post office location except for a 2-year period at the ranger station, 1.3 miles (2.1 km) to the north-northeast. Earlier, incomplete records from the ranger station go back to 1933. At Summit, observations were taken from 1935 to early 1979, with a few shifts in instrument location and many changes in observer. Precipitation measurements continue at Summit from a Fischer-Porter (punched-tape) recording gauge, which also transmits the data via satellite. Further station-history details, for these and other places, are given by U.S. Weather Bureau (1956) and Dightman (1967a).

The detailed summary tables were in part obtained through a data tape furnished by Dr. Joseph M. Caprio, State Climatologist at Bozeman, MT, and computer programs by Bradshaw (Bradshaw and Fischer 1984). The tape contained daily observations for the years 1949 through 1978. Additional data were tabulated from monthly and annual issues of "Climatological Data" State summaries for Montana and from U.S. Weather Bureau (1937, 1955, 1965); also from records furnished by the National Climatic Center, Asheville, NC. Tabulated data included those for the long-term climatic stations at Babb 6NE (6 miles NE) and Browning, both located east of Glacier Park in prairie or rangeland; the station at Browning was discontinued in 1980 (but replaced by a Fischer-Porter gauge).

Figure 5.—Climatological stations on perimeter of Glacier Park; 1982 photographs except as noted. (A) West Glacier, near Park Headquarters. Thermometer shelter in center, precipitation gauges at left (Fischer-Porter recording type, with windshield) and right ("stick" type); snow-depth marker also visible. (B) Polebridge; thermometer shelter behind building housing mercantile and post office, precipitation gauge in open area to right of photo. (C) Summit, original station location near railroad; thermometer shelter in mid-background; 1947 photo from Corps of Engineers (1952b). (D) Present station near Summit (Marias Pass), Fischer-Porter gauge only; antenna to left of gauge for transmission of data via satellite. Thermometer shelter was located on the wooden platform during 1967-73.

Data for the fire-weather stations were accessed from tapes at the National Fire-Weather Data Library, Fort Collins, CO (Furman and Brink 1975), and from original forms filed through 1970 at the Intermountain Fire Sciences Laboratory. Summary tables again were obtained through the computer programs of Bradshaw and Fischer (1984). A few of the stations are pictured in figure 6. The fire-weather data in this report are based primarily on observations near 4 p.m. (1600) m.s.t., the standard prior to 1974; observations have been at 1 p.m. (1300) since then. As shown later, the change—made in accordance with new national standards—has resulted in some noncomparability with previous data.

As noted in figure 2, data were also obtained from stations in research areas. Locations include the former Upper Columbia Snow Laboratory, near Summit (or Marias Pass), where hydrometeorological data were observed during 1946-51 (Corps of Engineers 1949, 1952a,b,c,d); also the Coram Experimental Forest, south of West Glacier (Hungerford and Schlieter 1984). Other data include year-round records at St. Mary Ranger Station furnished by Jerry Ryder, Subdistrict Ranger, Glacier National Park.

Climatic averages for locations in Canada are, in part, from Atmospheric Environment Service (1982a,b,c). Special Waterton Park-area data were provided by David R. Graham, River Forecast Center, Alberta Environment, and Henry Turchanski, Atmospheric Environment Service, Environment Canada—both at Edmonton, and the report by Poliquin (1973). A copy of that report and other, first-hand information were furnished by Robert A. Watt, Warden Service, Parks Canada, Waterton Park.

Figure 6.—Fire-weather or seasonal stations, Glacier National Park area; 1982 photographs except as noted. (A) West Glacier; site, more open, is about one-half mile northwest of year-round climatological station (fig. 5). Air-sampling equipment located on wooden platform. (B) Polebridge, at Ranger Station. Wind is, at present, measured with hand-held meter. (C) St. Mary; site one-fourth mile northwest of Ranger Station (and present year-round station). Napi Point and part of 1984 fire area in distance. (D) Hungry Horse, at Ranger Station (1984 photo). (E) Many Glacier, at Ranger Station; temperature and precipitation measurements only.

Data from Montana snow-survey courses, giving snowpack depth and water content, are from the Soil Conservation Service (SCS)(1975) and from monthly issues of that agency's "Water Supply Outlook." The SCS office at Bozeman, MT, through Phillip E. Farnes, provided "SNOTEL" (snow telemetry) data; these include cumulative water-year (October-September) precipitation, as at the station in figure 7. Streamflow, or runoff, data were obtained from bulletins of the U.S. Department of the Interior, Geological Survey (USGS), and from the USGS district office in Helena, MT. Additional data sources are identified later within the text.

Figure 7.—SNOTEL (snow telemetry) station at Many Glacier; site between Ranger Station and Swiftcurrent Lake. Snow course is along fence; snow pillow, precipitation gauge with windshield, temperature sensor (inside vane-type shield), and antenna mast are within enclosure.

The fire-weather and various climatic data were checked for errors and missing values. Using available backup sources and comparisons with adjacent stations, highly suspect daily and monthly values were corrected, replaced with estimates, or discarded. Estimates were made where possible for the missing values, which could be important in some cases (Finklin 1983a). Precipitation and snowfall measurements that occasionally covered a period of 2 or more days were apportioned to individual days. A backup source that aided in some of this editing was the monthly publication, "Hourly Precipitation Data," summary for Montana. That publication also provided data for continuing part of the record at Summit, referred to earlier.

Averages; "Normals"

Climatic averages in this handbook include those for a standard 30-year "normal" period (currently 1951-80), as adopted by international convention; the normal values are revised every 10 years. The 30-year length tends to balance out short-term variations, though a longer period is desirable for precipitation (World Meteorological Organization 1967). A 20-year data sample, however, has been used in fire-weather summary tables, governed by availability of data at an unchanged observation time. As already noted, this time was changed by 3 hours in 1974. Fire-weather averages are presented for 1951-80 in several graphs, adjusting the more recent data to the previous 1600 m.s.t. observation time, which better represented the extreme afternoon conditions.

Likewise, for comparability among locations, averages at stations with short periods of record have been adjusted to the 30-year period. The calculations, involving adjacent long-term stations, employ the "difference method" for temperature and relative humidity; the "ratio method" for precipitation (Oliver 1973; Finklin 1983a).

Even with 30 years of data, 10-day averages are apt to exhibit irregularity, largely accidental. Thus, smoothing is employed in some of the graphs—mainly a running 1-4-1 weighting factor applied to successive 10-day values.

Averages have been further adjusted in the case of maximum and minimum temperatures—to a 24-hour period representing the actual calendar day, midnight to midnight. This is the reference period used at the primary (airport) stations of the National Weather Service. The observed average maximums at cooperative and fire-weather stations, with data for a 24-hour period ending near 1600 or 1700, are as much as 2 °F (1 °C) higher than those for the calendar day (Rumbaugh 1934; Finklin 1983a); see table 17 (appendix).

Another estimate or adjustment was involved in presenting averages of temperatures for a fixed higher elevation, or 6,000-ft (1 830-m) slope location, as in figure 22 in the "Temperature" section. In this case, the already-obtained normals from two short-record park area stations near this elevation were adjusted for compatibility with normals computed for the former stations at Mullan Pass, ID, Old Glory Mountain, BC (fig. 1), and Bangtail Ridge (near Bozeman, MT), and also for lookout stations. This took into account elevational and horizontal temperature gradients (shown in above section).

CONDENSED SUMMARY OF THE CLIMATE

Summary by Seasons

The seasons in the Waterton-Glacier area do not easily follow the widely used or standard 3-month divisions. Seasons adopted by the National Climatic Center in the United States are based on the 3 successive months that ordinarily have the highest and lowest average temperatures during the year. Thus, while June, July, and August comprise the standard summer season, June is more of a spring month in Waterton-Glacier—with weather more similar to that in May than to that in July-August. December, January, and February comprise the standard winter season. However, from considerations of below-freezing average temperatures and snowfall, winter in Waterton-Glacier may properly also include much of November and March. This leaves April, May, and June as the suggested spring season and September-October representing autumn.

Winter.—As thus defined, winter within Waterton-Glacier is, of course, normally cold and has copious precipitation (mostly snowfall). Precipitation amounts generally increase with elevation; they decrease rapidly with horizontal distance near and beyond the eastern edge of the park. November, December, and January are normally the wettest (snowiest) months of the year within most of the park boundary. December and January monthly totals average about 3 to 5 inches (75 to 125 mm) water equivalent at lower elevations and more than 10 inches (250 mm) on some of the high terrain. Over most of the park, the 5-month season accumulates between 50 and 60 percent of the annual total precipitation. The annual totals range from about 23 inches (575 mm) to more than 100 inches (2 500 mm) (in Glacier Park). At lower elevations, the period of continuous snow cover usually extends from sometime in November to sometime in April. Snow cover continues into May at approximately 5,000-ft (1 525-m) locations such as Many Glacier and Marias Pass.

January has the lowest monthly average temperature, with 24-hour means near 15 to 20 °F (−10 to −7 °C). Although severe cold can occur in the presence of Arctic airmasses, with 50-year extremes of −40 to −55 °F (−40 to −48 °C), winter temperatures average higher than those at locations farther east at the same latitude. The recurrent influx of mild Pacific airmasses is a primary modifying factor. January temperatures sometimes exceed 45 to 55 °F (7 to 13 °C), particularly on the east side, where the Pacific airmasses are further warmed under downslope ("chinook") wind conditions. Chinook windspeeds have been known to reach 100 mi/h (160 km/h). Overall, winds on the east side average about 13 to 15 mi/h (20 to 25 km/h) during winter, with the most frequent direction from the west or southwest. In the sheltered western valley areas, average speeds are at or near a minimum during winter, about 5 or 6 mi/h (8 to 10 km/h). This is a cloudy time of year, and sunshine is expected only 20 to 30 percent of the maximum possible time during November-January near and west of the Divide. Relatively sunny conditions occur near the eastern edge of the park.

Spring.—The warming trend during spring is occasionally interrupted by cool, stormy periods. Precipitation normally slackens in late winter and early spring but increases again in May and June. At many valley locations normal June amounts, mostly 3 to 4 inches (75 to 100 mm), approach or exceed those of December and January. In the drier areas just east and southwest of the park, May and June are normally the wettest months of the year. Heaviest 24-hour precipitation has occurred in June, reaching 6 to 7 inches (150 to 185 mm) at several stations on a day in 1964. June is the month of greatest flood potential, the combination of heavy precipitation and melting mountain snowpack bringing an annual peak in runoff. Thunderstorm activity becomes frequent in June, occurring on an average of at least 5 days near a given location. The lightning does not present much fire threat, however, because the forest fuels at this time are usually relatively moist.

The springtime warming is slowed during June, with afternoon temperatures held down by the showery conditions. Daily maximums in June average near 70 °F (21 °C) at lower elevations. Corresponding afternoon relative humidity averages near 45 percent. Last "killing" frost or 28 °F (−2 °C) minimum temperature occurs around mid-May to mid-June at lower valley locations. Average windspeeds on the east side of the park show a seasonal decrease from their winter maximum. In the western valleys, average speeds are at their highest in spring, though still a few miles per hour lower than on the east side. Although spring days are often cloudy, the percentage of maximum possible sunshine duration increases to about 50 to 60 percent.

Summer.—A large change in average conditions occurs in July. The short (2-month) summer, the main fire season, is usually a time of minimum cloudiness and precipitation within Waterton-Glacier. July precipitation totals average about 1.5 inches (38 mm) near the park edges; 2.5 to 3.0 inches (65 to 75 mm) over the park interior near the Continental Divide. August has slightly higher averages. In individual years, summer monthly totals at perimeter locations such as West Glacier, MT, may be near zero or as high as 4 to 5 inches (100 to 125 mm). Snowfall, limited to higher terrain and occasional years, has reached at least 9 inches (23 cm) at 7,500-ft (2 280-m) Mount Brown Lookout in late August. As in June, thunderstorms may be expected near a given location on 5 or more days during both July and August; this applies to both sides of Glacier Park.

July, normally slightly warmer than August, has average temperatures (24-hour means) near 60 to 63 °F (15 to 17 °C) in the lower valleys. The characteristic fair, dry weather results in large daily temperature ranges, so that July daily maximum temperatures average as high as 80 °F (27 °C) along the western edge of Glacier Park. Summer afternoon temperatures usually decrease with elevation, at an average rate of 4 to 4.5 °F per 1,000 ft (about 7.5 to 8 °C per 1 000 m). Summer nighttime temperatures, however, are often much lower in the valleys than on adjacent mountain slopes, due to temperature inversions. Fifty-year extreme maximum temperatures have reached close to 100 °F (38 °C) or slightly higher. The humidity on July and August afternoons averages about 35 to 40 percent in the valleys, but in extreme cases these monthly averages have been below 20 percent. Windspeeds during July-August are at an annual minimum on the east side and over the mountain terrain. Typical midafternoon winds in the park, away from sheltering timber, are between 7 and 10 mi/h (11 and 16 km/h), mostly from the southwest. But sustained winds of at least 25 to 30 mi/h (40 to 50 km/h), with stronger gusts, have been observed in extreme cases—most recently with the wildfires in August 1984. Sunshine during July-August averages about 70 to 75 percent of the maximum possible.

Autumn.—Autumn (September-October) usually comes early and is a distinctly transitional season. Average daily maximum temperatures for September fall 10 or 11 °F (6 °C) below those of August. The first "killing" frost or 28 °F (−2 °C) minimum normally occurs sometime in September, with average dates as early as September 2 at Polebridge, MT (August 21 in the higher valley at Summit, MT). Monthly precipitation totals

show an average seasonal increase within most of the park (a decrease in adjacent drier areas). The increase is only slight at many locations; a more pronounced increase begins in November (part of our defined winter season). October amounts are generally between 2 and 3 inches (50 to 75 mm). Snowfall is usually light during October in the west-side valleys, but particularly heavy storms occur in some years on the east side. At Summit, MT, as much as 61 inches (155 cm) snowfall has been measured in October; 30 inches (76 cm) on a single October day. September monthly snowfall here has reached 29 inches (74 cm).

October average windspeeds on the east side are already close to those of the winter season, while speeds are down to their yearly minimum in some west-side areas. Cloudiness is on the increase and sunshine percentage on the decrease during autumn but, again, a greater change occurs in November.

Summary by Individual Elements

Precipitation; Snowfall.—Normal annual precipitation (rain and melted snow) within Glacier Park ranges from about 23 inches (585 mm) to 100 inches (2 500 mm) or more. Topographic factors, including elevation, have a strong influence. Wettest areas are apparently in the central and northern interior, along or near the Continental Divide—particularly in cirque locations such as Grinnell Glacier, where precipitation is increased by upslope effects of both westerly and easterly winds. Driest areas are along the northeastern and northwestern edges, as at Polebridge. Available data indicate that the east side of Glacier Park receives about as much precipitation, averaged over the area, as the west side. Amounts are considerably lower on the plains a little farther east, where Browning averages 16 inches (400 mm).

December and January normally have the heaviest monthly precipitation over most of Glacier Park, with a secondary peak occurring in June. May and June are normally the wettest months on the adjacent plains and in the main Flathead Valley, as at Kalispell. A large decrease typically follows in July, the driest month within Glacier; a slight increase in August. Average amounts in summer exhibit small areal difference, as compared with those in winter months. At lower elevations, January normals range from 3 to 5 inches (75 to 125 mm); June, 3 to 4 inches (75 to 100 mm); July, 1 to 2 inches (30 to 50 mm). Between years, July-August totals at West Glacier have varied from 0.28 inch (7 mm) to 8.29 inches (211 mm).

Average annual snowfall along the park edge ranges from about 120 to 270 inches (300 to 680 cm) (heaviest near Marias Pass); the average probably exceeds 600 to 700 inches (1 525 to 1 775 cm) in favored mountain locations. Snowfall water content contributes more than 50 percent of the total precipitation at park elevations above 4,500 ft (1 370 m). Snow cover along the park edge usually persists from sometime in November to sometime in April or May; seasonal maximum depths here average mostly between 30 to 70 inches (75 to 175 cm). Mountain snowpack may linger into July in locations as low as 6,000-6,500 ft (about 2 000 m); depths average as much as 10 ft (3 m) or more on May 1.

Thunderstorms.—The main season of lightning (or thunderstorm) activity extends from about mid-May to mid-September. Storms around a given location (within about 20 miles [32 km]) occur on an average of 5 to 7 days per month during June, July, and August. The frequency appears to be similar on the west and east sides of Glacier Park. About 50 percent of the July-August thunderstorms begin between 1200 and 1800 m.s.t. Lightning counts at Desert Mountain Lookout indicated a lightning activity level of 5 (as defined in the National Fire Danger Rating System) in about 20 percent of the storms.

Temperature.—Normal monthly "mean" temperatures at valley and canyon bottom locations, below 5,000 ft (1 525 m), range from about 15 to 20 °F (−10 to −7 °C) in January to 57 to 62 °F (14 to 17 °C) in July; 36 to 41 °F (2 to 5 °C) for the year. These are arithmetic averages of the daily maximum and minimum temperatures, based on or adjusted to the 24 hours ending at 12 midnight. The July maximum temperatures average mostly between 72 and 80 °F (22 and 27 °C), reflecting large diurnal ranges favored by clear, dry summer weather. January average maximums are mostly between 25 and 27 °F (−4 and −3 °C) and are similar on the east and west edges of Glacier Park; the average is down to 22 °F (−6 °C) near Marias Pass. The east side may often be much colder than the west in winter, with invading Arctic airmasses blocked by the Continental Divide, but may also be much warmer at times—under chinook wind conditions.

Summer afternoon temperatures are highly correlated with elevation; station data give an overall decrease or "lapse rate" of about 4.3 °F per 1,000 ft (7.8 °C per 1 000 m). The summer nighttime temperatures, however, show the effects of inversions; average minimums on mountain terrain may be higher than those in valleys more than 3,000 ft (900 m) lower. The "mean" temperatures are, thus, also affected. Inversions may persist throughout the day in late autumn and winter. At a 6,000-ft (1 830-m) slope or ridge location, estimated mean temperatures are near 17 °F (−8 °C) in January; 58 °F (14 °C) in July. On a 9,000-ft (2 745-m) mountain, the estimates are about 8 °F (−13 °C) and 47 °F (8 °C), respectively.

Extreme maximum temperatures during the past 50 years have reached 100 to 105 °F (38 to 40 °C) near the west edge of Glacier Park, slightly lower near the east edge, and 85 °F (29 °C) at 7,500 ft (2 280 m). Minimums have reached between −40 and −55 °F (−40 and −48 °C).

The season between "killing frosts," defined as the period with minimum temperatures above 28 °F (−2 °C), averages 4 months (mid- or late May to mid-September) near the east edge of Glacier Park; between 2½ and 4½ months in west-side valley locations. Places such as Polebridge and Summit have minimums down to 32 °F (0 °C) or lower during every month in most years.

Humidity.—Relative humidity, which generally varies inversely with temperature, averages highest near dawn and lowest around midafternoon. The afternoon values

average highest in midwinter months—averaging about 60 percent near the eastern edge to 75 percent or more in the west and at higher elevations. Averages are down to 35 to 40 percent in July-August at lower elevations; near 45 percent at 6,000 ft (1 830 m). Frequency of a midafternoon humidity below 30 percent, in the west-side valley area, increases from about 23 percent of the days in mid-June to 57 percent in late July and early August; it decreases to 20 percent by late September. A 3-hour change in observation time at fire-weather stations has affected comparability of afternoon humidity (and temperature) data recorded before and after 1974. In addition, during the past 10 years, there has been a regime of higher July-August humidity conditions.

Summer nighttime humidity in the west-side valley area typically recovers to near 90 percent or higher by dawn. On the slopes above the temperature inversions, at the same time, humidity may average only about 60 percent.

Wind.—The seasonal wind patterns show considerable difference across the park. The high, exposed mountain terrain and areas east of the Continental Divide have a pronounced windspeed maximum in winter and a minimum in summer (July-August)—generally following the regime in the free atmosphere. Monthly average (24-hour) speeds may reach about 20 mi/h (32 km/h) on the peaks during November-February; 15 mi/h (24 km/h) near the eastern park edge, where gusts to 100 mi/h (160 km/h) have been reported in chinook episodes. The western valleys tend to have a windspeed minimum in winter, with averages of about 5 mi/h (8 km/h), and a maximum in spring.

During summer, midafternoon windspeeds average about 6 or 7 mi/h (10 or 11 km/h) in the western valley area; 9 or 10 mi/h (14 to 16 km/h) on the east side. Averages at the available lookout stations vary between 6 and 12 mi/h (10 and 20 km/h), influenced by topographic peculiarities. The winds generally decrease at night, with near calm conditions particularly common in the western valleys; however, nighttime increases may often occur on the high mountains.

Prevailing (most frequent) wind directions are from the west or southwest during most of the year. Summer afternoon winds are generally from the southwest, on both sides of the Divide, but some deviations occur due to local topographic channeling. The large-scale wind predominates over local up-valley breezes on the east side. Directions tend to reverse at night on the west side, with local downslope and down-valley air movement dominant.

Sunshine; Solar Radiation.—Late autumn-early winter is normally the cloudiest time of year, with respect to clouds that block out the sun; July-August, the clearest. December sunshine duration averages only about 20 to 35 percent of the maximum possible—or 50 to 90 hours total; this is greatest near the eastern edge of the park. Duration in July reaches about 70 to 75 percent, or 340 to 380 hours, lowest over the mountains and toward the north. Incoming solar radiation (insolation), direct and diffuse, normally totals about 2,500 langleys (gm-cal/cm^2) in December; 19,000 langleys in July; 120,000 langleys for the year. The insolation should generally increase with elevation, but this may be offset by greater cloud cover over the mountains. Effects of slope aspect are greatest in winter. In December and January, a south-facing 30° slope may receive nearly twice as much total radiation as a horizontal surface. In July, the totals should be nearly identical.

Evapotranspiration.—Potential evapotranspiration—integrating effects of temperature, relative humidity, windspeed, and solar radiation—may average about 22 inches (560 mm) at lower elevations during May-October; 26 or 27 inches (675 mm) for the year. These are estimates utilizing adjacent evaporation-pan data. Lesser amounts may be expected at higher, cooler locations. Because of the usual dry period during summer, the actual evapotranspiration will be less than the potential; by perhaps 5 inches (125 mm) or more, for the year, at lower elevations. "Thornthwaite" water-balance diagrams indicate the importance of late spring and July-August precipitation in the severity of a year's soil moisture deficit—and, by implication, the fire season.

Climatic Trends.—Available precipitation records during this century indicate, broadly (by 11-year running means), decreasing annual totals in the Glacier Park area during the 1910's—leading to a long, dry period centered in the 1920's and 1930's; a marked recovery peaking around 1950; and subsequently, little overall change, though there has been a recent downward trend. July-August precipitation, however, increased notably in the 1970's; 11-year and 5-year (weighted) means apparently reached their highest levels of the century. Recent September-October amounts, in contrast, have (until 1984) been exceptionally low.

Temperature data, annual and seasonal, show an overall rising trend during the 1910's and 1920's; a warm period centered in the 1930's or early 1940's (coinciding with low precipitation); a relatively cool period centered around 1950-55; and a lesser rise since then, with some seasonal disparity. Since about 1910, the latest 11-year means indicate a net warming of 1 °F for annual values; 2 °F in both winter and summer.

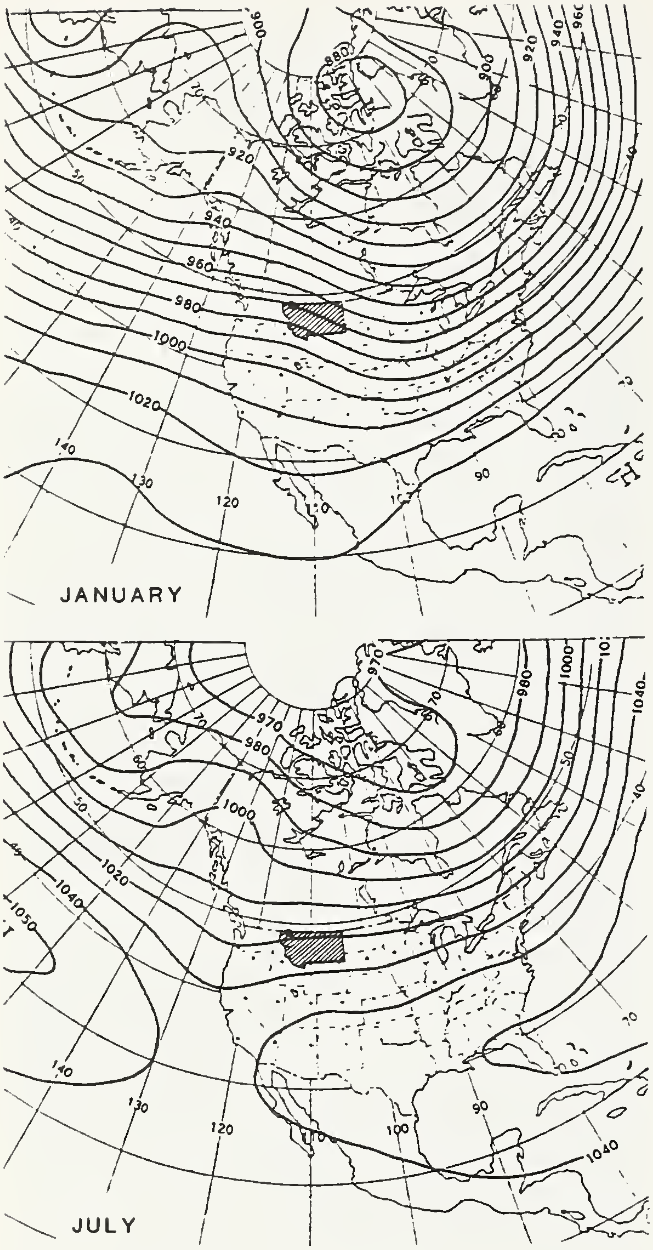
Some basic climatic statistics for three stations are given in table 18 (appendix).

DETAILS OF THE CLIMATE

Climatic Controls; Broad Weather Patterns

The climate of Waterton-Glacier is governed by a combination of large-scale and small-scale factors. The large-scale factors include latitude, position on the North American continent, prevailing hemispheric wind patterns, and extensive mountain barriers. Small-scale or local factors include the topographic setting and position and the vegetative cover (Schroeder and Buck 1970; Oke 1978). Elevation as a factor has both regional and local components.

Large-scale wind patterns for midwinter and midsummer, at about 10,000 ft (3 000 m) above sea level, are indicated in figure 8. The maps portray average conditions in the "free atmosphere"—above the effects of surface friction and local topography. The inferred



A.

B.

Figure 8.—Average 700-millibar height patterns over North American region for January (A) and July (B): lines are height contours, labeled in tens of feet. Waterton-Glacier location is shown by heavy dot near northwestern corner of Montana (hatched). Maps provided by National Meteorological Center.

airflow—closely parallel to the 700-millibar (mb) height-contour lines—is from a general westerly direction over the Waterton-Glacier location. Corresponding windspeeds are inversely proportional to the spacing between lines. The average wind patterns do, of course, smooth out important day-to-day and year-to-year variations. These variations, through the steering effect of upper-level winds on airmasses and their fronts (Schroeder and Buck 1970; Critchfield 1974), lead to the variety of weather and its anomalies that enter into climatic statistics.

The airflow aloft is generally stronger in winter than in summer: this is related to a greater north-south temperature contrast. The main band of westerly winds retreats northward in summer, and the primary storm tracks are likewise displaced. Large-scale weather systems thus tend to be less active and organized over the United States in summer, though these still often enter the Waterton-Glacier area.

Broadly, the climate of this area is transitional between a northern Pacific coastal type and a continental type (Blair 1942; Hare and Thomas 1974). Superimposed are mountain-climate characteristics. The Pacific influence is noted particularly by a late autumn and winter maximum in cloudiness and precipitation over the park (winter becomes much drier a short distance east); also in the relatively moderate average winter temperatures compared with the continental area farther east—though the averages can be deceiving. Winter temperatures are especially variable on the east side of the park, as arctic airflow alternates with warm downslope winds (chinooks) occurring with Pacific airflow (Cunningham 1982). Summer is generally sunny and dry. July and August, usually the only distinct summer months, are the peak fire-danger months.

Precipitation

ANNUAL PRECIPITATION

Average annual precipitation (fig. 9) is extremely variable across the Waterton-Glacier area. Within the Glacier Park boundary, average amounts (rain plus snowfall water content) range from about 23 inches (585 mm) to 100 inches (2 500 mm) or more. Amounts observed are apt to be somewhat below true values at some of the Montana climatic stations, particularly east of the Continental Divide; this is due to the effect of wind in reducing gauge catch of precipitation, especially snow (Linsley and others 1958). Precipitation averages may be somewhat above true values at some of the Alberta stations, due to a practice of estimating the water content of newly fallen snow from its depth. A fixed ratio of 0.10 is applied, which may often be too high (Landsberg 1958 and present author's experience).

The annual amounts show a strong influence of topographic factors besides elevation. An effect of proximity to the mountains or Continental Divide, favoring heavier amounts, is evident from averages on the east side—for example, 46 inches (1 170 mm) at Many Glacier SNOTEL site compared with 23 inches (585 mm) at the east end of Lake Sherburne. The eastern edge of Glacier Park averages about as much annual precipitation as the western edge, at least from West Glacier northward and East Glacier northward. Amounts do decrease considerably a little farther east at elevations only a few hundred feet lower, with Browning averaging one-half the annual total at East Glacier.

Precipitation increases greatly between the western edge of Glacier Park and Flattop Mountain (fig. 10)—where an 82-inch (2 080-mm) annual average represents a net gain of more than 50 inches (1 270 mm) in an elevational difference of around 3,000 ft (915 m). Precipitation "spillover" across surrounding higher ridges (Huschke

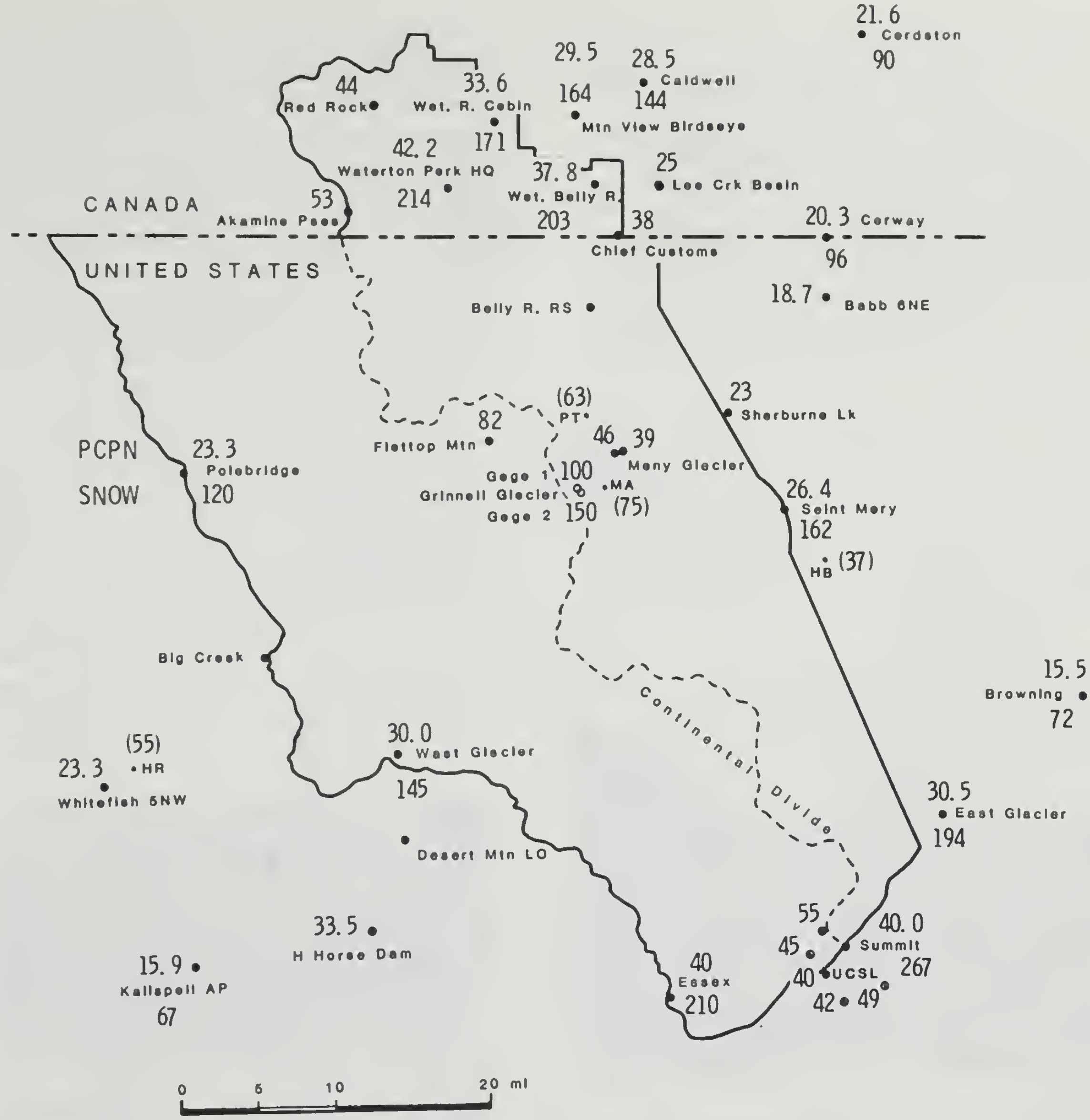


Figure 9.—Average annual precipitation (top or only number) and snowfall, inches, observed in and near Waterton-Glacier Park; based on or adjusted to normal period, 1951-80. Precipitation includes rain and melted snow (snowfall water content generally estimated at Canadian stations; see text). Number in parentheses is annual estimate based on snowpack data.

Figure 10.—Flattop Mountain (middle distance), viewed toward southwest, September 1954. Present SNOTEL site, below ridgeline near left edge of photo, averages about 80 inches (2 000 mm) annual precipitation.

1959; Barry 1981) may possibly contribute to this; there is evidently little precipitation shadow effect here. Elsewhere west of the Divide, annual precipitation averages about 40 inches (1 000 mm) at Essex and also at Summit, nearly 1,500 ft (450 m) higher. Near Summit, however, a modest precipitation increase occurs on the former Upper Columbia Snow Laboratory (UCSL) terrain between headquarters and steep ravine locations (stations 10 and 32 in fig. 2) to the east and north—amounts increase 9 to 15 inches (220 to 375 mm) in about 1,500 to 1,800 vertical ft (460 to 540 m). In a study area just north of Waterton Lakes National Park (Poliquin 1973), annual amounts increased about 10 inches per 1,000 ft (250 mm per 300 m).

Extrapolations of precipitation amounts for specific park locations are evidently tenuous, and thus we have not fitted a line pattern to the figure 9 data. (A line pattern, or isohyetal map, is presented for this area by the Soil Conservation Service [1981].) Broadly, the amounts in figure 9 seem to reflect an upslope increase on the usually windward west side and a decrease down the east side; the general physical process is described by Schroeder and Buck (1970). In some storms, the upslope air movement is from the east, reversing the windward and leeward sides. Precipitation enhancement from both the westerly and easterly upslope effects may help explain the exceptionally heavy annual amounts in cirque locations such as Grinnell Glacier (figs. 9 and 11), indicated by two storage-type gauges (fig. 12). (The data are from Dightman 1967b; Johnson 1980; "Storage Gage Precipitation Data for Western United States" annual summaries.)

With the prevailing westerly or southwesterly airflow, precipitation at Grinnell Glacier—at the east face of the Continental Divide's "Garden Wall"—probably includes much spillover from the west side. (Spillover is a result of the precipitation trajectories, affected by the wind.) Also received, both during and after storms, is much previously deposited snow blown off the higher terrain (Matthes 1942; Dyson 1966; Ruhle 1972). Dightman (1956) attests to the occurrence of severe winds, whose damaging effect precluded the use of windshields on the precipitation gauges (to curtail the loss in gauge catch due to wind). The difficulty in obtaining a true catch in this setting may largely account for the 50-inch (1 270-mm) average difference between the two gauges, located only 2,100 ft (640 m) apart and at similar elevations. The 150-inch (3 800-mm) annual average at gauge No. 2 does appear to be excessive (Brown and Peck

Figure 11.—(A) Broad setting of Grinnell Glacier (mostly hidden), toward distant right of center, and portion of Many Glacier area; viewed from northeast, in 1954. Hotel faintly visible on the near shore of Swiftcurrent Lake (middle distance, with Josephine Lake beyond). (B) Closer view of Grinnell Glacier (portion of ice surface visible) and the "Garden Wall," on cool, showery August 31, 1954.

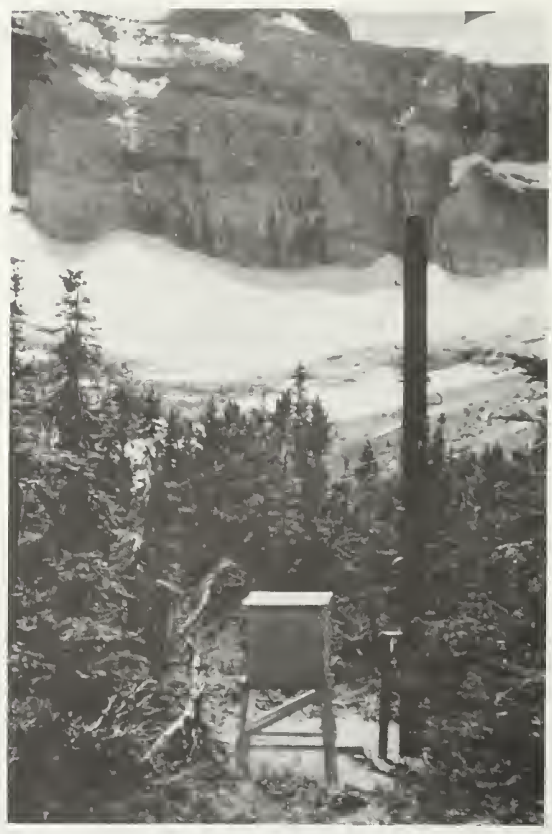


Figure 12.—Storage precipitation gauge (21-ft standpipe) and thermometer shelter near Grinnell Glacier (site No. 1, averaging 100-inch [2 540-mm] annual catch), July 1960.

1962). At gauge No. 1, the gain from blown snow may closely balance out the expected catch deficiency of actual snowfall.

Annual Extremes.—Precipitation totals in individual years can differ by a factor of 2 or more. Amounts at West Glacier since 1931 (table 19, appendix) have ranged from 17.43 inches (443 mm) to 41.38 inches (1 051 mm). Those on record at Summit have ranged from 25.30 inches (643 mm) to 55.39 inches (1 407 mm); at Polebridge, from 13.07 inches (332 mm) to 33.92 inches (862 mm).

MONTHLY DISTRIBUTION

Within most of Glacier Park, December and January normally have the heaviest monthly precipitation (fig. 13). Listed in more detail in table 19 (appendix), January averages range from 3 to 5 inches (75 to 125 mm) at lower elevations to at least 11 inches (280 mm), as at Flattop Mountain. Roughly 45 to 60 percent of the annual total falls during the 5 months November through March, with this percentage generally greatest in the wettest areas.

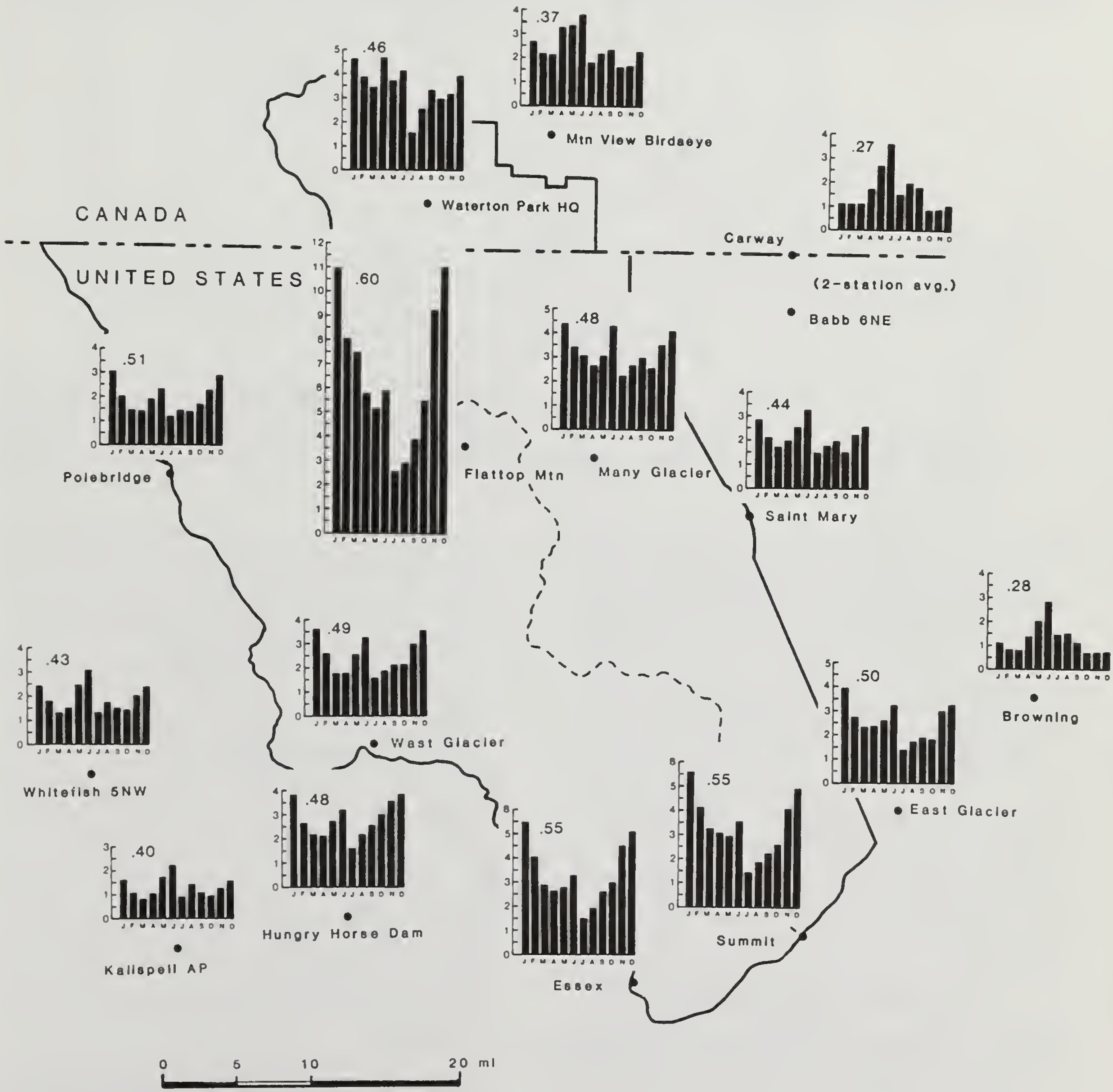


Figure 13.—Average monthly precipitation, inches; annual regime. Based on or adjusted to period 1951-80. Numbers above graphs are ratios of 5-month November-March total to annual total. Amounts shown for Flattop Mountain differ from those in table 19 (Appendix), which are estimated from additional years of data.

Following a decrease during February through early spring, giving March and April averages of about 1.5 to 3 inches (35 to 75 mm) in the valleys, precipitation normally increases in May and June. At many valley locations the June amounts, generally 3 to 4 inches (75 to 100 mm), approach or exceed those of December and January. A large decrease normally occurs in July, the driest month; a rise of a few tenths of an inch in August. Average amounts in summer exhibit relatively small areal difference, shown further in figure 14. July normals are near 1.5 inches (38 mm) on the edges of Glacier Park, though only 1.2 inches (30 mm) at Polebridge; 2.5 to 3.0 inches (63 to 80 mm) on or near some of the higher interior terrain.

The monthly pattern differs somewhat at valley locations in Waterton Lakes Park, where April may be one of the wettest months—averaging about 4.5 inches (115 mm) at Waterton Park townsite. A larger difference occurs in the drier area adjoining Waterton-Glacier. To the east (as at Browning, Babb, and Carway), June is normally the wettest month and May second wettest—the averages, reaching 3 to 3.5 inches (75 to 90 mm) in June, are generally similar to those at lower elevations within the park. December and January both have aver-

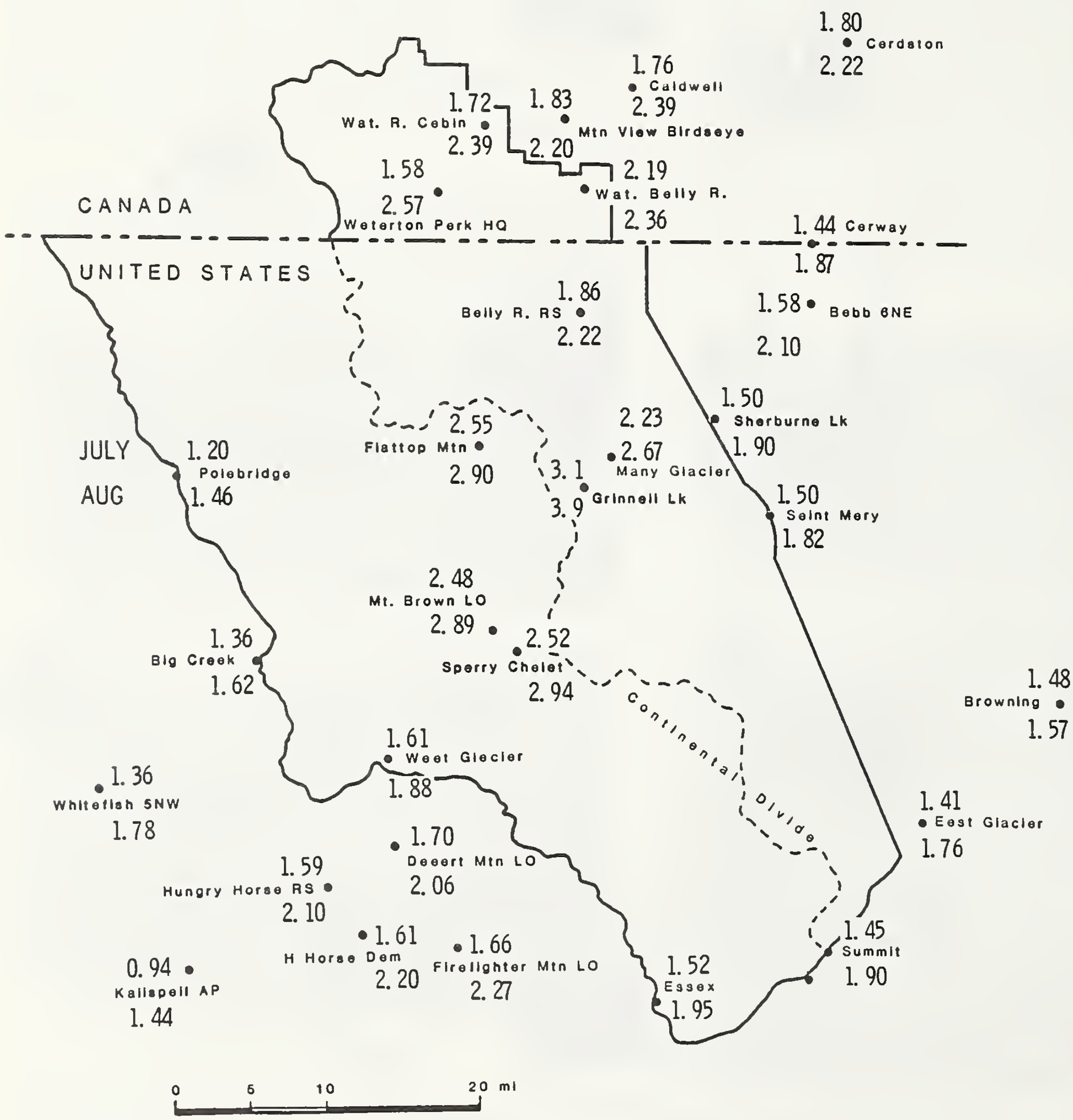


Figure 14.—Average precipitation, inches, during July (top number) and August (bottom number). Based on or adjusted to period 1951-80.

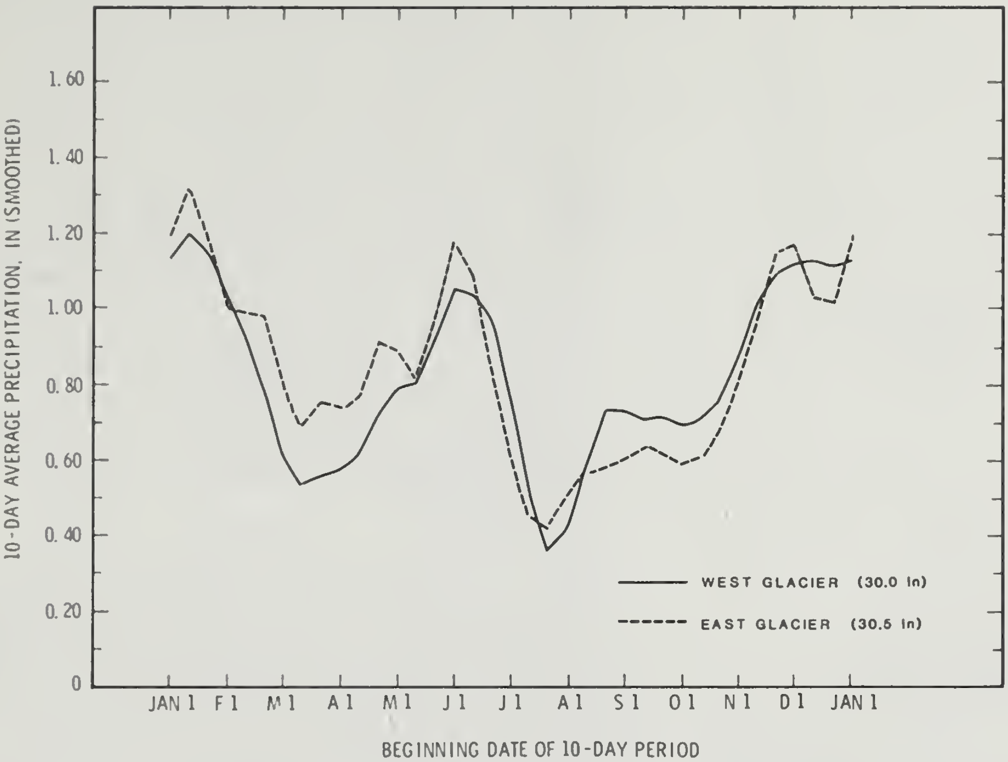


Figure 15.—Comparison of average annual precipitation regime at West Glacier and East Glacier, MT (annual totals shown in parentheses); based on 30 years of data, 1951-80. Lines connect plotted 10-day average values (or averages adjusted to 10-day period), smoothed by a running 1-2-1 weighting factor.

ages of about 1.0 inch (25 mm). Precipitation is more evenly distributed throughout the year in dry Flathead Valley locations such as Kalispell; the May-June total is only slightly higher than that during December-January.

Monthly precipitation amounts for the individual years of record, back to the 1930's, are listed in table 20 (appendix) for Polebridge, Summit, and West Glacier. Ten-day and monthly statistical details are given in table 21 (appendix). A comparison in figure 15 shows an overall similarity of the precipitation regimes at West Glacier and East Glacier, using smoothed 10-day averages. With annual totals nearly identical, East is slightly wetter than West in spring; slightly drier in autumn.

Monthly Extremes.—Monthly precipitation at West Glacier (tables 18 and 21, appendix) has been as high as 7.72 inches (196 mm), observed in December 1980. Totals have reached 6.92 inches (176 mm) at Polebridge and 11.91 inches (303 mm) at East Glacier, both observed in January 1954; 14.00 inches at Summit, in January 1953. Zero or near-zero totals have occurred at all of these stations in July and August. Practically none also occurred in January 1985—0.05 to 0.26 inch (1 to 7 mm).

DAILY AND HOURLY AMOUNTS

Percentage frequencies of various daily precipitation amounts are shown in table 22 (appendix); some of the data are presented in figure 16 (see also table 18, appendix). Generally; the frequencies of relatively small amounts are at a maximum in winter and a minimum in summer. For example, during January amounts of 0.10 inch (2.5 mm) or greater occur on an average of 15 days at Summit, 11 days at West Glacier, and 10 days at Polebridge. The frequency is down to 4 or 5 days in both July and August. This seasonal contrast may change in the case of large daily amounts. At Polebridge and West Glacier, amounts exceeding 0.50 inch (12.5 mm) are equally as frequent (or infrequent) in June as in January—1 or 2 days per month.

Figure 17 portrays the seasonal contrast in frequency of hours with recorded precipitation. During 1948-64 at Summit, the average number of hours with at least 0.01 inch (0.25 mm) ranged from 186 in January to 42 in July; at Polebridge, from 96 to 26. These numbers generally follow the seasonal trends of average monthly precipitation (fig. 13) and numbers of days with precipitation (fig. 16). The frequencies of hourly amounts $\geq$0.05 inch (1.25 mm) exhibit a smaller winter-summer contrast, though at Summit these frequencies follow the secondary precipitation peak in June.

The above data reflect the importance of storm frequency and duration in amassing the heavy winter precipitation; hourly amounts are usually small, less

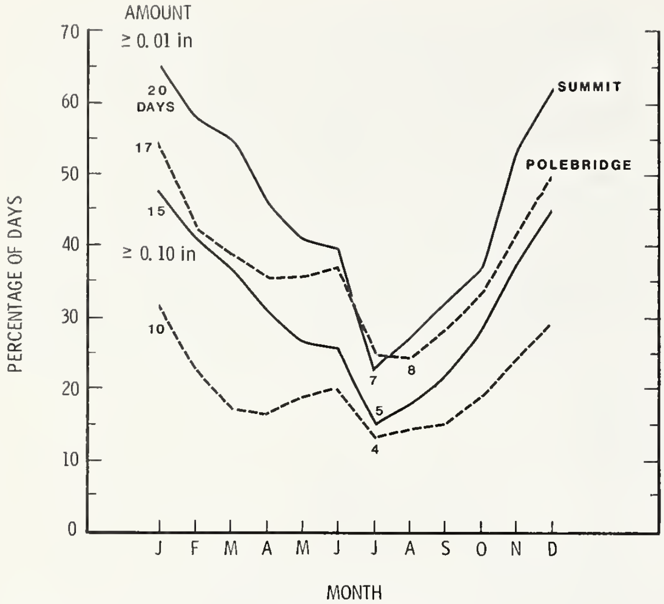


Figure 16.—Monthly percentage of days with precipitation equal to or greater than 0.01 inch (0.25 mm) and 0.10 inch (2.5 mm) at Polebridge and Summit, MT, based on period 1949-78. Plotted numbers are equivalent actual numbers of days, given for extreme months.

than 0.05 inch (1.25 mm). Likewise, the July-August precipitation minimum (fig. 13) is related to fewer days—and hours per day—of precipitation occurrence. Though hourly amounts in summer are more likely to reach higher levels than those in winter, most are still less than 0.05 inch (1.25 mm).

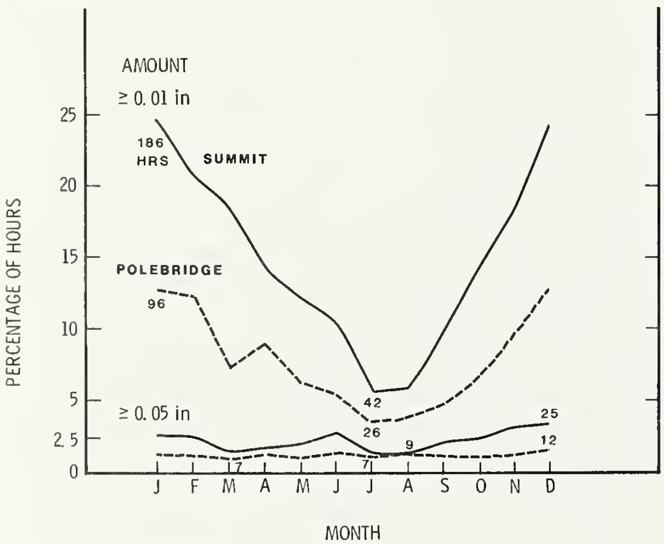


Figure 17.—Monthly percentage of hours with precipitation equal to or greater than 0.01 inch (0.25 mm) and 0.05 inch (1.25 mm) at Polebridge and Summit, MT. Plotted numbers are equivalent actual numbers of hours, given for extreme months. Based on table by Pacific Northwest River Basins Commission (1968) for period 1948-64.

Daily and Hourly Extremes.—Maximum daily precipitation is included in tables 18 and 21 (appendix). Outstanding is the extreme of 7.31 inches (186 mm) at Summit in June 1964—a month notorious for record floods in the Waterton-Glacier area ("Climatological Data," National Summary for June 1964; "Climatological Data," State Summary for Montana, June 1964; Christopherson 1966). This amount, occurring as rain, fell in the 24-hour period ending at 4 p.m. m.s.t., on June 8; the June 7-8 storm total was 8.09 inches (205 mm). The same storm brought a 24-hour record at West Glacier, 3.47 inches (88 mm), but not at Polebridge. Also in 24 hours, 6.80 inches (173 mm) fell at East Glacier and 5.90 inches (150 mm) at Browning; about 6.00 inches (150 mm) at Waterton Park Headquarters. Two-day totals at East Glacier and Browning were 8.15 inches (207 mm) and 7.65 inches (194 mm), respectively. An estimated 12 inches (300 mm) fell on some of the high east-side slopes—still covered with exceptionally heavy snowpack.

During this storm, the expected 100-year, 24-hour extreme amounts shown by Miller, Frederick, and Tracy (1973) were equaled at West Glacier and exceeded by 2 to 3 inches (50 to 80 mm) at the more eastern stations.

Maximum 1-hour amounts, available for Summit, are listed in table 1. No exceptional, "cloudburst" values are noted. The 35-year extreme, 0.54 inch (14 mm) during the June 1964 storm, is about one-half the calculated 100-year and 25-year extremes (above reference). A total of 2.92 inches (74 mm) accumulated in a 6-hour period of this storm, well above the 100-year value shown as 2.2 inches (56 mm). In the cooler months of the year, highest recorded 1-hour amounts at Summit are mostly about 0.20 inch (5 mm).

Less complete data or shorter records from Polebridge, West Glacier, and Browning show similar 1-hour extremes of about 0.60 inch (15 mm), observed in different years. Much heavier downpours can occur locally, however, even in drier locations—as was the case when 2.57 inches (65 mm) fell at the Kalispell airport in 1 hour (between 6 and 7 p.m.) on June 29, 1982.

PRECIPITATION DURING FIRE SEASON

Some precipitation details, by 10-day periods, are plotted in figure 18; these, taken from tables 21 and 22 (appendix), cover the official fire season (May-October) and 1 or 2 months before and after. Details for additional fire-weather stations are given in tables 23 and 24 (appendix). Figure 18 shows that precipitation is normally lowest between July 10 and August 20, sandwiched between the springtime peak during June and a pronounced increase in late August. The 10-day averages do not indicate much further increase until November. The corresponding frequencies of various daily amounts (and 10-day totals) follow a similar pattern. A high correlation between frequencies and averages is indicated further in figure 19. Given the 10-day average precipitation, this graph may be used to estimate the climatic probability of a day with "wetting" precipitation, 0.10 inch (2.5 mm) or more, during any portion of the fire season at various Glacier Park locations.

Table 1.—Monthly maximum 1-hour precipitation, inches, at Summit, MT, during period 1948-82[1]

Item	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
No. years[2]	25	29	24	28	30	30	34	32	31	30	26	22	
Average	0.14	0.12	0.11	0.12	0.17	0.23	0.19	0.20	0.16	0.14	0.14	0.12	
Extreme,[3]	0.40	0.22	0.2	0.2	0.30	0.54	0.4	0.5	0.33	0.3	0.20	0.20	0.54
year	1953	1951	1974, 1982	1977, 1979	1953	1964	1975	1976	1952	1980	1955	1955	1964 June

[1]Data from weighing-type recording gauge through January 1973; from Fischer-Porter gauge, with only 0.1-inch increments, beginning February 1973.
[2]Years with complete data (or noncritical missing data).
[3]Given to tenths of an inch when value is that from Fischer-Porter gauge.

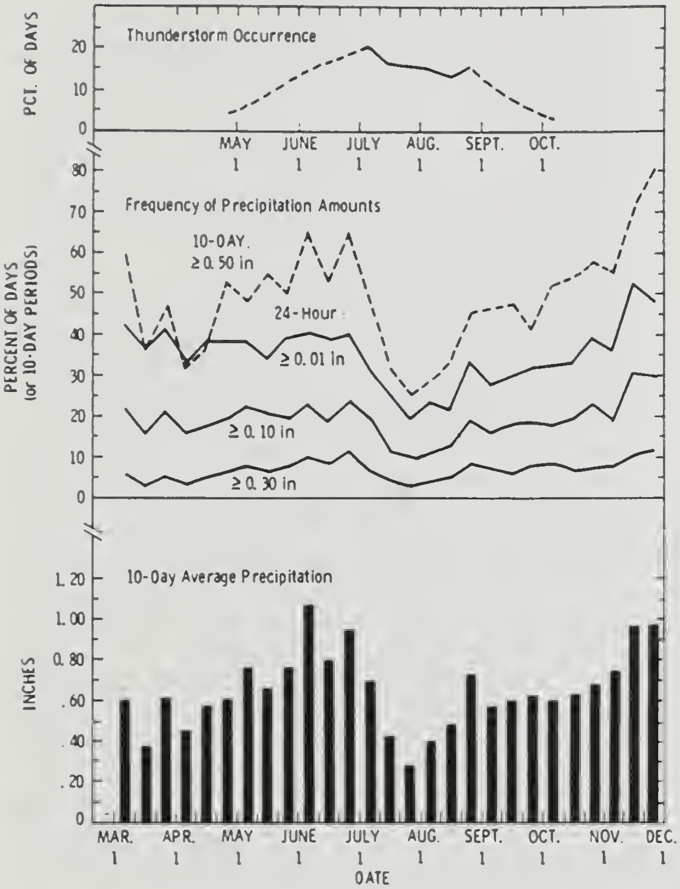


Figure 18.—Ten-day precipitation and thunderstorm occurrence, near west edge of Glacier Park; values plotted at middle of periods. Precipitation is two-station average from Polebridge and West Glacier, 1951-80. Amounts for 11-day periods are adjusted to 10 days. Thunderstorm graph for July and August is based on Desert Mountain Lookout, 1936-71 (storms within about a 20-mile radius); for other months (dashed line), occurrence is approximated from ranger station and Kalispell airport data.

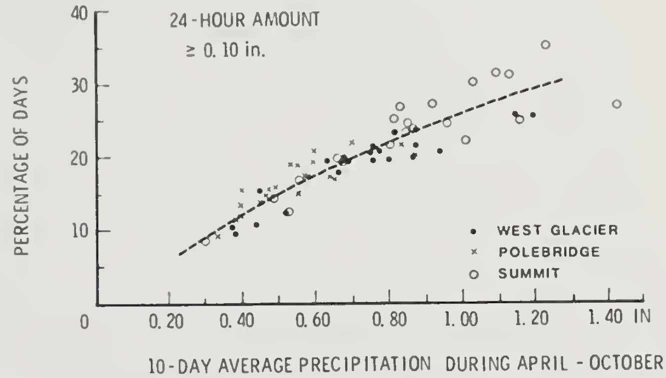


Figure 19.—Relationship between frequency of days with precipitation ≥ 0.10 inch (2.5 mm) and the 10- (or 11-) day average precipitation, April-October. Based on 30 years 1949-78 at indicated stations. Dashed curve fitted by eye.

Although July and August are normally dry, many exceptions do occur. Notable in table 20 (appendix) are the consecutive summers of 1975-78. Combined July-August precipitation in 1978 totaled 6.06 inches (154 mm) at Polebridge and 7.52 inches (191 mm) at West Glacier. These stations had still larger amounts of 6.77 inches (172 mm) and 8.29 inches (211 mm), respectively, in July-August 1954.

SNOWFALL

Annual and Monthly Snowfall.—Average annual snowfall totals are included in figure 9; monthly totals, in table 19 (appendix). These represent the sums of individual daily snowfall accumulations, ideally measured before any reduction—by settling, melting, or wind action—occurs. Along the edges of Glacier Park (and at lower elevations of Waterton), the 30-year annual averages range from 120 inches (305 cm) at Polebridge to 267 inches (678 cm) at Summit. During January, generally the snowiest month, these two stations have averages of 35 inches (90 cm) and 56 inches (143 cm), respectively. (April is normally the snowiest month at the Waterton Lakes Belly River station.) In the higher reaches of the park, annual totals may average as much as 800 to 1,000 inches (2 000 to 2 500 cm) (communication from Phillip E. Farnes). A location with 80 inches (2 000 mm) precipitation, such as Flattop Mountain, may receive snowfall of 650 inches (1 650 cm) or more. The maximum depth attained by the snowpack will, of course, be considerably less.

Figure 20 indicates that snowfall water content contributes 50 percent of the annual precipitation at a park elevation of about 4,500 ft (1 370 m). The 70 percent level may be near 6,500 ft (1 980 m). The snowfall proportion is lower on the plains to the east, a result of the smaller proportion of wintertime precipitation. Individual monthly and annual (seasonal) snowfall totals are listed in table 25 (appendix).

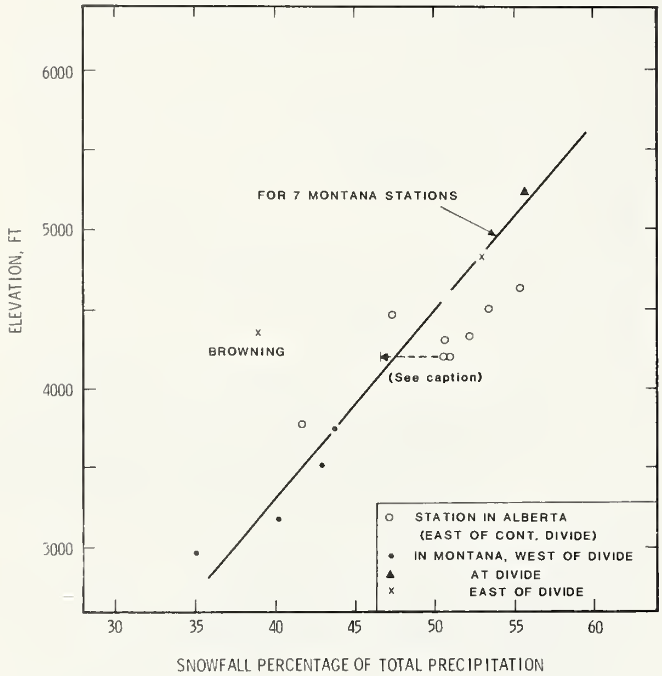


Figure 20.—Percentage of annual precipitation occuring as snowfall, in relation to elevation, at stations in or near Waterton-Glacier Park, based on or adjusted to period 1951-80. Regression line is based on the Montana stations, excluding Browning; assumes an overall 12 to 1 snowfall/water-content ratio. Percentage values at Alberta stations use published precipitation estimates assuming a 10 to 1 ratio; arrow at end of dashed line illustrates result if 12 to 1 ratio is used.

Extreme Seasonal and Monthly Snowfall.—Seasonal snowfall at West Glacier has varied from 46 inches (117 cm) to 279 inches (709 cm), observed in 1971-72; at Summit, from 143 inches (363 cm) to about 392 inches (996 cm), including estimates for some incomplete 1971-72 data. This particular season brought 215 inches (546 cm) at Polebridge and 321 inches (815 cm) at East Glacier. Highest recorded monthly totals at these four stations range from 91 inches (232 cm) at Polebridge in January 1954 to 131 inches (333 cm) at Summit in January 1972. In contrast, January 1985 brought only 1 to 4 inches (3 to 10 cm).

Daily Snowfall.—At higher elevations, snowfall of at least 1.0 inch (2.5 cm) may occur on an average of 40 percent or more of the days during November through March. Summit has an annual average of 76 snowfall days (table 18, appendix), with 15 of these in January and 14 in December—though rain may also fall here during winter. West Glacier has nearly as many snowfall days in December-January but just 44 days annually. This number decreases to 37 days at Polebridge. Frequencies of various daily snowfall amounts are shown in table 26 (appendix).

An extreme 1-day snowfall of 44 inches (112 cm) was measured at Summit in January 1972, with a 2-day total of 54 inches (138 cm); 35 inches (89 cm) at East Glacier in December 1971, with a 2-day total of 39.5 inches (100 cm). Polebridge and West Glacier have received 20 inches (51 cm) in 1 day; Waterton Park Headquarters, 29 inches (74 cm) (in November).

Summer Snowfall.—Snowfall may sometimes occur in July or August at the higher elevations, though still somewhat uncommon at 7,500 ft (2 280 m). Mount Brown Lookout, at this level, had such snow accumulation in at least 5 of the years during 1930-57, mostly in late August; 9 inches (23 cm) in August 1932 and 1947. Sperry Chalet, at 6,575 ft (2 000 m), during 1960-75, had 4 years with late August snowfall; 4 inches (10 cm) in 1960. More unusual, Summit, at 5,215 ft (1 590 m), received 4 inches (10 cm) in mid-July 1972.

Snow Depth; Snowpack.—At locations along the edges of Glacier Park, snow cover (depth of 1 inch or more) is usually continuous from sometime in November to sometime in April or May (fig. 21, upper panel). Average duration of continuous cover ranges from 134 days at West Glacier to 194 days at Summit. The average depth peaks in February at Polebridge and West Glacier, at near 2 ft (60 cm); in March at Summit, near 4.5 ft (140 cm) (fig. 21, lower panel). Seasonal maximum depth, which may occur at other times, averages somewhat greater (table 2). Extreme depths have reached 54 to 58 inches (137 to 147 cm) at Polebridge and West Glacier; 132 inches (335 cm) at Summit.

The average snowpack density at Marias Pass is shown in figure 21, lower panel, to increase from 0.25 on January 1 to 0.35 on April 1 and 0.40 on May 1. Data from this and other snow courses are summarized in table 27 (appendix). Only a May 1 snow survey is taken at some of the courses in the Many Glacier vicinity; snowpack at those courses above 5,500 ft (1 700 m) is near a seasonal maximum at this time of year.

The Mount Allen course has a normal May 1 snow depth of 9 ft (2.7 m), with a water content of 48 inches (1 222 mm). Flattop Mountain has about 53 inches (1 350 mm) water content on May 1 and still averages 43 inches (1 100 mm) on June 1; the snow often remains here into July.

THUNDERSTORMS

The main season of lightning (or thunderstorm) activity extends from about mid-May to mid-September. Figure 18 (top panel) shows that storms within a given 20-mile (32-km) observing radius may occur on 15 to 20 percent of the days during June, July, and August—or an average of 5 days per month. (The frequency of a storm occurring anywhere within the entire Waterton-Glacier area will be somewhat greater.) The higher, more centrally located Mount Brown Lookout reported an average of 7 to 8 storm days in July and 6 days in

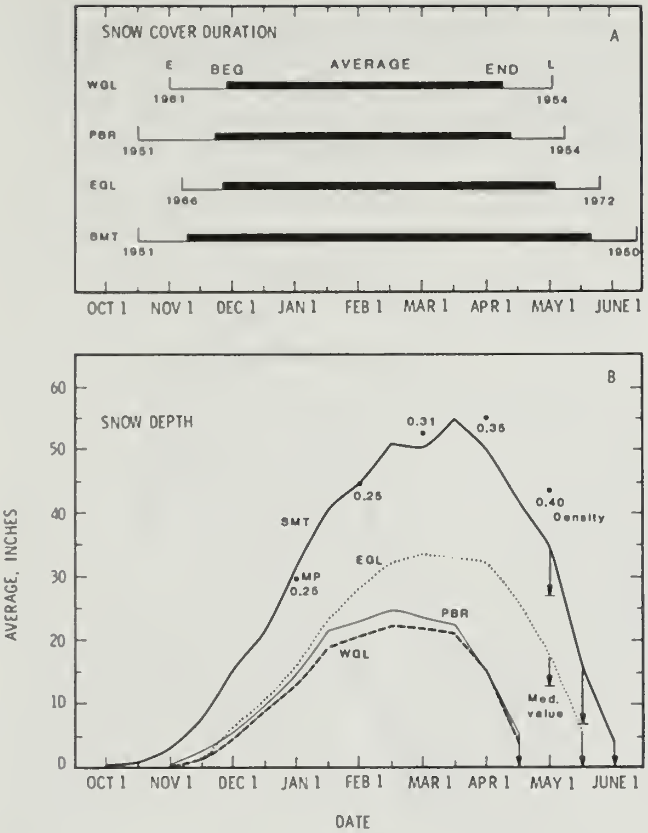


Figure 21.—Snow cover and snow depth observed at edges of Glacier Park; at Polebridge (PBR), West Glacier (WGL), Summit (SMT), and East Glacier (EGL). Panel A: Average duration (heavy bar), earliest beginning date (E), and latest ending date (L) of continuous seasonal snow cover ≥ 1 inch; calendar years shown for extreme dates. Averages generally based on period 1951-80; extremes, 1949-83; EGL data, 1965-83. Panel B: Average seasonal depths based on values at middle and end of months; years as above, except 1949-68 at SMT. Heavy dots denote 1951-80 average at Marias Pass (MP) snow-survey course near SMT; plotted numbers, snowpack density (water-content/snow-depth ratio). Heads of arrows, plotted in late season, indicate median values of snow depth.

Table 2.—Monthly and seasonal maximum snow depth,[1] inches: average (avg.), median (med.), and record highest and lowest—based on indicated water years; calendar years shown for extreme values. M denotes value missing

Station		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Annual
East Glacier	Avg.	2	4	12	23	32	37	39	34	16	0	44
1965-85	Med.	0	3	10	20	30	40	40	32	11	0	47
	High,	10	24	35	54	79	81	83	59	55	M	83
	yr	1984	1984	1978	1964	1972	1972	1972	1971	1967	1965	1972
	Low,	0	0	1	4	6	5	7	2	0	0	15
	yr											1972
Polebridge	Avg.	0	2	9	18	28	30	27	16	1	0	34
1951-80[2]	Med.	0	0	7	18	28	33	28	16	0	0	36
	High,	5	11	22	39	54	47	50	51	14	M[5]	54
	yr	1949	1984[4]	1959	1951	1954	1949	1954	1954	1954	1966	1954
	Low,	0	0	1	6	8	3	4	0	0	0	10
	yr											1977
Summit	Avg.	3	7	20	37	51	59	61	57	36	3	69
1949-68[3]	Med.	0	6	20	34	48	57	60	54	27	0	72
	High,	18	37	49	54	105	84	96	132	86	23	132
	yr	1965	1951	1959	1957	1954	1954	1954	1954	1954	1950	1954
	Low,	0	0	6	20	30	11	25	21	0	0	30
	yr											1977
West Glacier	Avg.	0	1	8	16	26	29	25	16	1	0	31
1951-80[2]	Med.	0	0	6	15	26	28	26	17	0	0	32
	High,	1	8	27	40	58	55	49	44	8	M[5]	58
	yr	1972	1984[4]	1959	1984	1972	1972	1972	1954	1954	1966	1954
	Low,	0	0	1	6	9	11	5	0	0	0	14
	yr											1961

[1]At daily (generally afternoon) observation time.
[2]High and low for period 1949-85.
[3]Low and all Sept., Oct., Nov., and June data for period 1949-79. Other data not included beyond 1968 due to suspected highly excessive values.
[4]Also in 1951.
[5]Possibly several inches.

August (1931-57 data). Coram Ranger Station (R.S.) and Hungry Horse R.S. combined, Polebridge R.S., and Belly River R.S. all reported an average of 4 storm days per month in July and August (1946-70 data).

The ranger station data may omit some of the thunderstorms, due to the more limited view and hours of vigil. The above numbers, nevertheless, suggest a similar frequency of storms on the west and east sides of Glacier Park and an increase over higher, rugged terrain. This would be in line with averages from the adjacent primary National Weather Service stations and derivative map portrayals of annual occurrence (Baldwin 1973; Bryson and Hare 1974). For the Glacier Park area, these maps indicate about 25 to 30 thunderstorm days per year around a given location.

Data from Desert Mountain and Mount Brown (table 3) show a pronounced afternoon and early evening maximum in thunderstorm activity. About 50 percent of the defined July and August storms began during the 6 hours between 1200 and 1800 m.s.t. Only 7 to 9 percent began between 0300 and 0900.

Table 3.—Frequency distribution of beginning times of thunderstorm activity, July and August; by 3-hour periods. Storms within about a 20-mile (32-km) radius, in or near Glacier National Park, observed at Desert Mountain Lookout (1936-71) and Mount Brown Lookout (1931-57)

Beginning time, m.s.t.	Lookout, number of storm cases[1] Desert 360	Brown 213
	Percent of total	
0000-0259	6.9	5.6
0300-0559	4.7	4.7
0600-0859	4.4	2.3
0900-1159	7.2	4.2
1200-1459	21.7	24.4
1500-1759	24.4	28.2
1800-2059	19.2	22.5
2100-2359	11.9	8.0

[1]On days with recurrent storm activity, individual storm periods are arbitrarily defined by at least 3 hours interval between observed lightning.

Detailed lightning observations at Desert Mountain during July-August 1960-71 indicate a Lightning Activity Level (LAL) (Deeming and others 1977) of 5 in 20 percent of the 81 usable storm cases, or on 3 percent of all days. This is based on 15-minute counts of cloud-to-ground lightning (Project Skyfire data, filed at Intermountain Fire Sciences Laboratory). The LAL was 2 in 51 percent of the cases, 3 in 17 percent, and 4 in 12 percent. These values are similar to those from Gisborne Lookout in northern Idaho (Finklin 1983b).

Temperature

ANNUAL PATTERN; MONTHLY AVERAGES

Temperatures described here are those of the air measured generally about 5 ft (1.5 m) above the ground. The yearly course of average maximum and minimum temperatures is portrayed in figure 22—for both lower and higher elevations on the west side of Glacier Park. The 6,000-ft (1 830-m) slope location curves are based primarily on data from the Coram "clearcut" station (CCUT in fig. 2)—on an east slope at 5,200 ft (1 585 m)—and the UCSL "station 10"—up a west-facing ravine at 6,340 ft (1 933 m). (See "Stations; Data; Methods" section.)

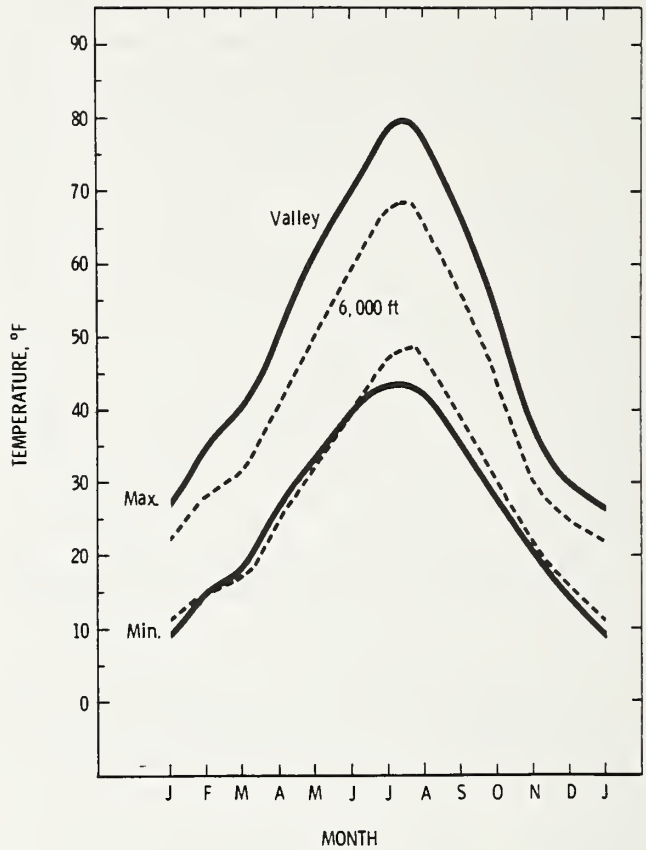


Figure 22.—Average daily maximum and minimum temperatures; annual regime. Based on or adjusted to period 1951-80 and midnight-midnight observation day. For west-side valley area of Glacier Park—based on a Polebridge-West Glacier average—and a 6,000-ft (1 830-m) slope location (see text).

The pattern in figure 22 should apply to other Waterton-Glacier locations, even though actual temperatures will vary. This is shown by the averages listed in table 28 (appendix), which also indicate influences of local factors besides elevation. January is normally the coldest month; July, the warmest. The available averages for these two months are mapped in figures 23 and 24.

January average maximum temperatures are about 25 to 27 °F (−4 to −3 °C) in the valley areas on both sides of the park; 22 °F (−6 °C) near Marias Pass. July average maximums are as high as 80 °F (27 °C) in the west-side valleys; generally 75 °F (24 °C) or lower on the east side. Diurnal ranges between average maximum and minimum temperatures increase in summer, reaching 35 to 40 °F (19 to 22 °C) in west-side valley areas. On the mountains and slopes, however, these ranges reach only about 20 °F (11 °C).

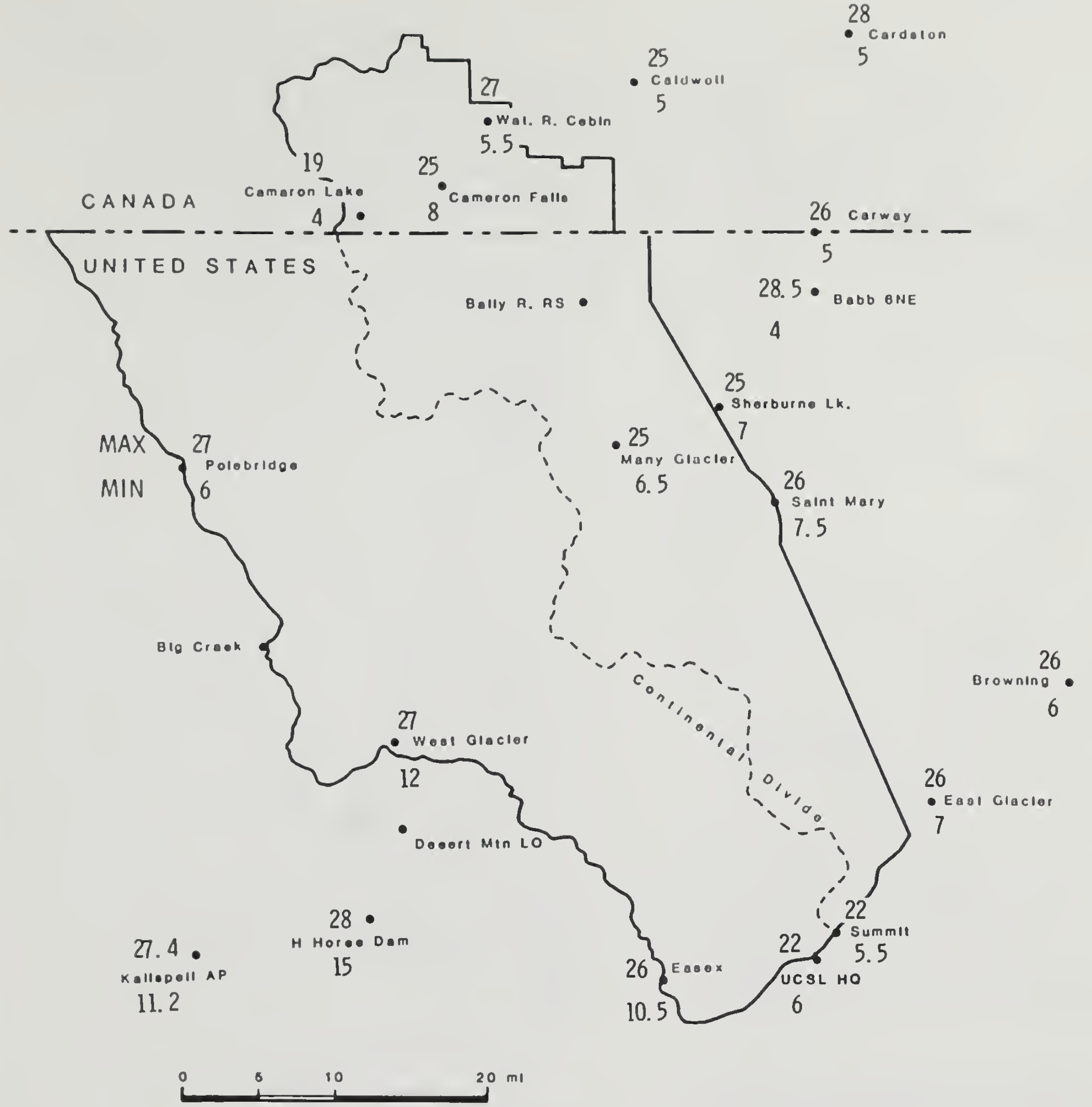


Figure 23.—Average daily maximum and minimum temperatures, °F, during January. Based on or adjusted to period 1951-80 and midnight-midnight observation day (the actual calendar day).

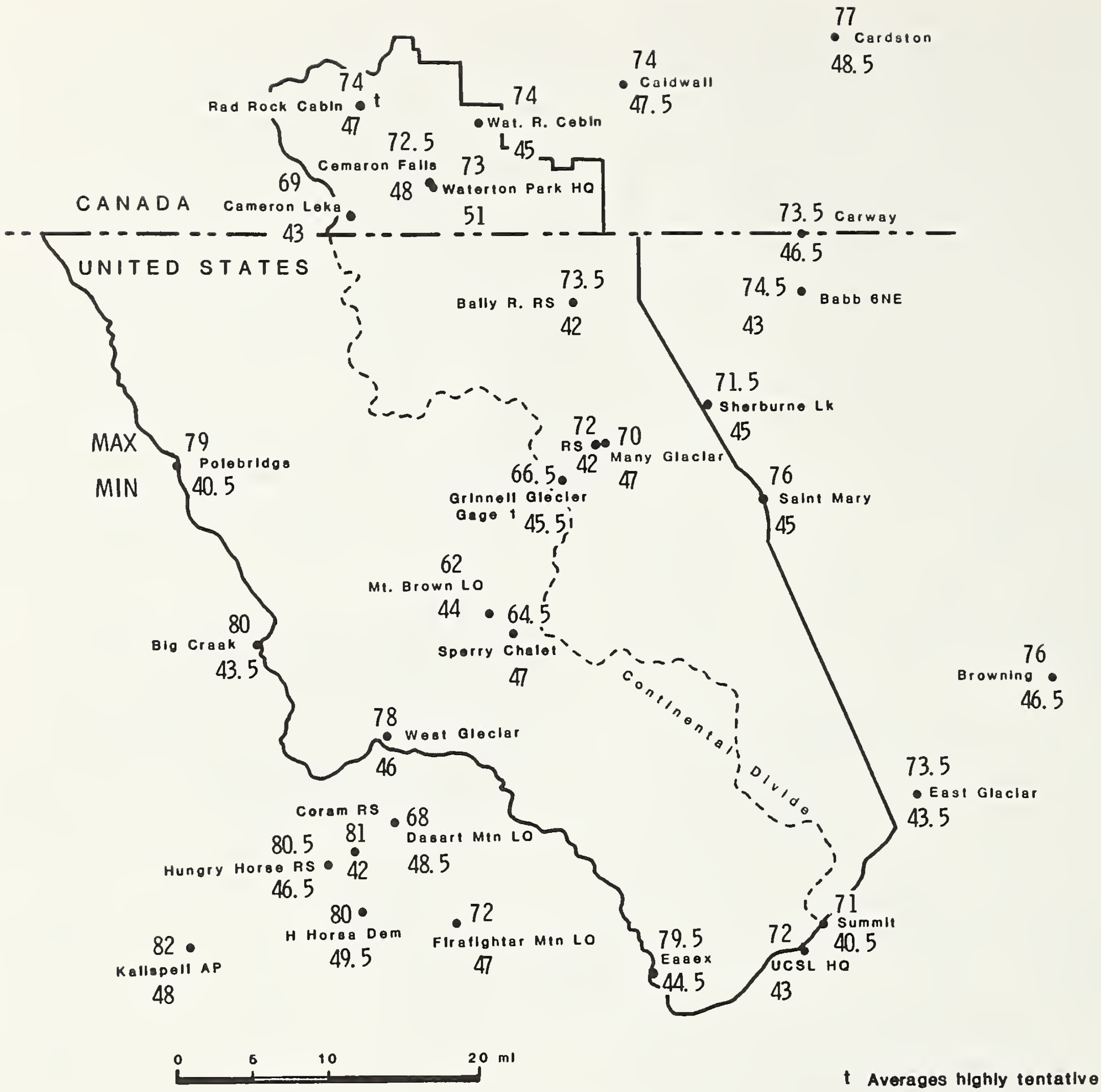


Figure 24.—Average daily maximum and minimum temperatures, °F, during July; as in figure 23. Averages at Grinnell Glacier (observed near picnic area) are estimated from August data.

Average maximum and minimum temperatures for each month of record, back to the 1930's, are listed in table 29 (appendix). Ten-day and monthly statistical details are given in table 30 (appendix); frequencies of various temperatures, in table 31 (appendix).

Smoothing out some of the local daytime and nighttime effects are monthly "mean" temperatures—calculated as arithmetic averages of the maximum and minimum temperatures. These values, shown in table 32 (appendix), give a good approximation of actual 24-hour averages. Normal January means in the valley or canyon areas below 5,000 ft (1 525 m) are generally between 15 and 20 °F (−10 and −7 °C), based on or adjusted to the calendar day. Corresponding July means vary from about 57 to 62 °F (14 to 17 °C); annual means, 36 to 41 °F (2 to 5 °C). Monthly mean temperatures at 6,000 ft (1 830 m) may be near 17 °F (−8 °C) in January and 58 °F (14 °C) in July. On a 9,000-ft (2 745-m) mountain, the estimates are about 8 °F (−13 °C) and 47 °F (8 °C), respectively.

Inversions; Temperature Variability.—Effects of nighttime temperature inversions are evident in figures 22 and 24. Nighttime inversions, favored by clear, calm weather conditions (Schroeder and Buck 1970; MacHattie 1970) are most frequent during July through early autumn. Minimum temperatures during this time average higher at lookout locations than at valley stations over 3,000 ft (915 m) lower in elevation. A "thermal belt" (Hayes 1941; Geiger 1965), with highest nighttime and 24-hour average temperatures, may be expected on the intervening slopes—at or near the typical inversion top. Such a belt is indicated in the Coram Experimental Forest, as shown later.

Temperature inversions in late autumn and winter

often persist throughout the daylight hours, particularly in the west-side valleys. Such inversions may be associated with a warmer airmass aloft (overriding a shallow or remnant cold airmass), in addition to nighttime surface cooling. They are indicated on a local scale by averages from the Coram and UCSL stations, presented later. On a larger scale, these inversions would help explain the east-side and west-side similarity in January average maximum temperatures (fig. 23) despite the elevational difference (fig. 2).

The east side, however, experiences greater year-to-year (and probably day-to-day) variation in winter temperatures, with contrasting Arctic airmass and chinook conditions. This is indicated by the standard deviations (Freese 1967; Snedecor 1956), plotted in figure 25. Over a 30-year period, January maximum temperatures here may average more than 8 °F (4.5 °C) above or below normal in 10 of the years; in the west-side valleys, 5 °F (3 °C) above or below normal.

Relatively small year-to-year variation in average maximum temperature is indicated in late spring and early summer on both sides of Glacier, but this increases in August and September. Notable in figure 25 is the even smaller variability of average minimum temperatures around this time of year at the valley-type locations; standard deviations for 4 months are near 2.0 °F (1.0 °C). Apparently contributing to this are the relatively cool nighttime temperatures that may occur under the same (clear, dry) conditions associated with warmest daytime regimes. This behavior was shown for the Selway-Bitterroot Wilderness in Idaho (Finklin 1981).

Table 4 illustrates the poor correlation between a valley station's average maximum and minimum temperatures during summer months; the coefficient r, in fact, has a negative value at Polebridge. High correlations are found during the cloudy winter months, with r around 0.95 in January.

Relationship to Elevation; Horizontal Gradients.—Figure 26 shows July average maximum temperatures plotted against elevation. The best-fit line, or linear regression (Freese 1967; Snedecor 1956), gives an overall temperature decrease, or "lapse rate," of 4.3 °F per 1,000 ft (7.8 °C per 1 000 m). This is similar to the rate obtained in the lower free atmosphere, several hours later, at adjacent "radiosonde" (upper-air sounding) stations (table 5). Though the correlation with elevation is high (r equal to −0.97), the average maximum temperature at a particular location can differ by 2 °F (1 °C) or more from the regression estimate. Such variation is also shown by data from MacHattie (1970), as illustrated later.

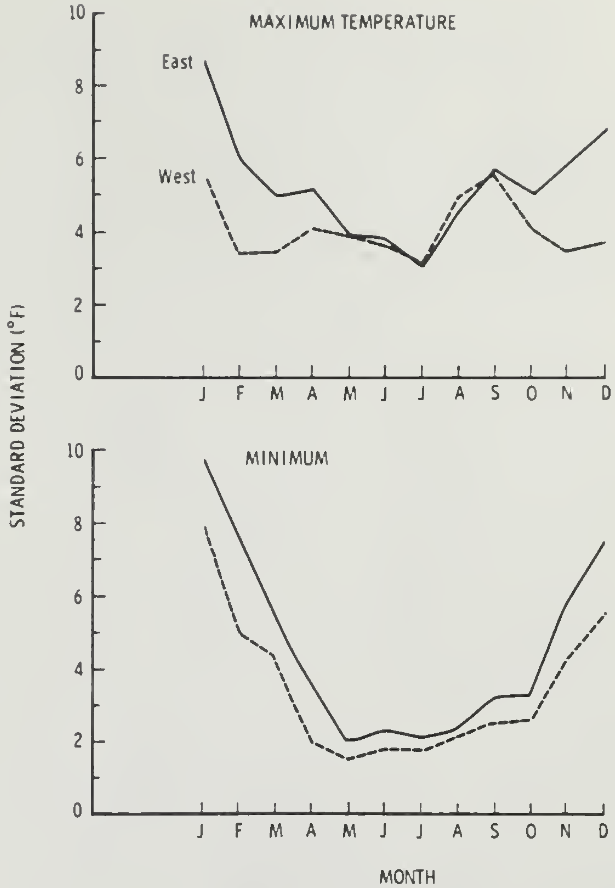


Figure 25.—Standard deviation (SD) of monthly average daily maximum and minimum temperatures, at valley stations in or near Glacier Park. Based on 30 years, 1949-78. West denotes Polebridge-West Glacier average SD; east, Babb 6NE-Browning average.

Figure 26 also includes point values and regression lines for the July mean temperatures. Affected by the nighttime inversions, it is evident that the means must be treated separately for the valley and mountain locations. Within these two groupings—but not between them—the resulting lapse rates average about 3.3 °F per

Table 4.—Correlation between average daily maximum and minimum temperatures at individual stations, for selected months (listed in seasonal order); based on period 1949-80

Station	No. years	Dec.	Jan.	Feb.	May	June	July	Aug.	Sept.	Oct.
		Correlation coefficient, r								
Babb 6NE	32	0.92	0.96	0.92	0.48	0.80	0.30	0.34	0.63	0.74
Browning	31	.96	.96	.91	.58	.72	.46	.54	.76	.74
Kalispell AP	32	.93	.96	.85	.62	.58	.14	.10	.47	−.24
Polebridge	32	.83	.94	.78	.47	.28	−.15	−.19	.13	−.35
Summit	27-31	.92	.96	.82	.29	.75	.05	.09	.67	.64
West Glacier	32	.93	.97	.86	.52	.59	.10	.15	.52	−.02

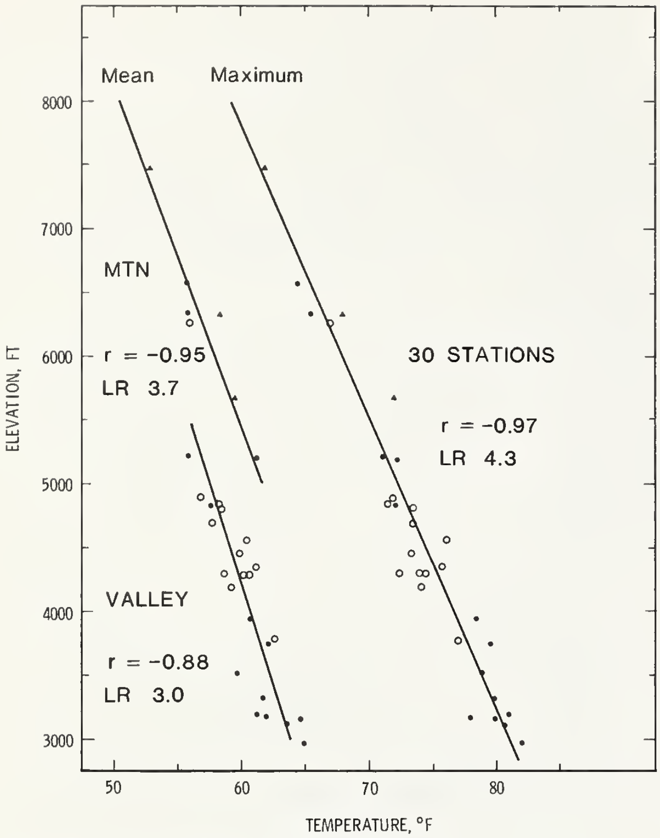


Figure 26.—Relationship between average temperature and elevation, July; Waterton-Glacier Park and vicinity. Data from 30 stations; based on or adjusted to the period 1951-80 and actual calendar day. Dots denote stations west of Continental Divide (triangles, lookouts); open circles, stations east of Divide. Fitted lines are based on regression equations—calculated for average daily maximum temperature and for mean temperature (arithmetic average of maximum and minimum). LR is slope of line converted to °F per 1,000 ft.

1,000 ft (6.0 °C per 1 000 m), somewhat less than the mean rate derived from table 5. Smaller wintertime lapse rates suggested earlier are also indicated in this table.

Horizontal temperature gradients in the free atmosphere are indicated in figure 27. The average isotherms near 10,000 ft (3 000 m) run closely parallel to the wind flow (fig. 8). The gradient over the Northern Rocky Mountain area appears stronger in summer than in winter—contrary to generalizations made for North America as a whole. Across Glacier Park, related horizontal differences in temperature may average up to 0.7 °F (0.4 °C) in January and up to 1.5 °F (0.8 °C) in July. These differences may be considered negligible, with elevational and other topographic influences more important. Across the width of Montana, however, the free-air temperatures in July over Glacier Park average about 8 °F (4.5 °C) lower than those at similar altitudes (a.s.l.) over Yellowstone Park.

Local Topographic and Site Effects.—Local variations in average temperature are shown in table 6 for the Coram Experimental Forest (Coram) area. The averages (estimated normals) for the Coram stations are derived from hygrothermograph data covering periods of 4 years or slightly longer. (Some highly suspect data, attributed to calibration problems, were excluded.)

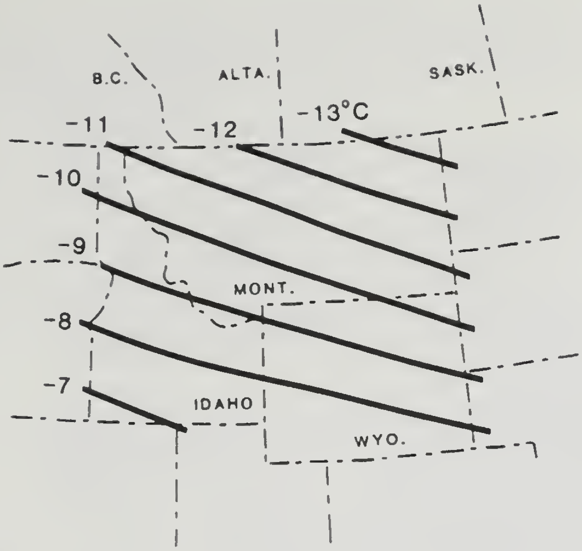
Among the Coram stations, average maximums in December-January show a decrease of only 1.2 °F (0.7 °C) between the clearcut sites at 3,950 ft (1 200 m) and 5,200 ft (1 585 m), apparently reflecting frequent daytime temperature inversions. The averages decrease 5.7 °F (3.2 °C) between the two sites in July-August. Strong nighttime inversions are indicated in summer, with average minimums 7 °F (4 °C) higher at the upper clearcut. These inversions are also evident in winter; the smaller average difference in minimum temperature obscures the large inversion magnitudes that can occur on clear, calm nights during this generally cloudy time of year.

Near the Continental Divide, temperature data from the Upper Columbia Snow Laboratory (table 28, appendix) show a similar local pattern. The December-January

Table 5.—Average temperatures and lapse rates in free atmosphere, observed at Great Falls, MT, and Spokane, WA; values for and between 850- and 700-mb pressure levels, winter and summer months. Based on soundings near 2000 m.s.t. during 1946-56 and near 0500 m.s.t. during 1957-70.[1] T is temperature, °F; Ht, average altitude of pressure surface, in tens of feet above sea level; LR, lapse rate, in °F per 1,000 ft

		Great Falls					Spokane				
		850 mb		700 mb		850-700	850 mb		700 mb		850-700
Month	Time	T	Ht	T	Ht	LR	T	Ht	T	Ht	LR
January	0500	23.5	475	12.3	971	2.3	26.2	478	13.6	976	2.5
	2000	21.0	472	10.1	966	2.2	22.9	475	11.9	969	2.2
July	0500	61.7	493	42.4	1,026	3.6	60.7	494	39.4	1,023	4.0
	2000	67.7	491	44.8	1,028	4.3	64.1	495	40.2	1,025	4.5
August	0500	61.0	491	42.2	1,023	3.5	59.6	492	39.3	1,021	3.9
	2000	66.8	491	43.8	1,026	4.3	63.1	493	39.6	1,023	4.4

[1]January data observed at 2000 m.s.t. through 1957.



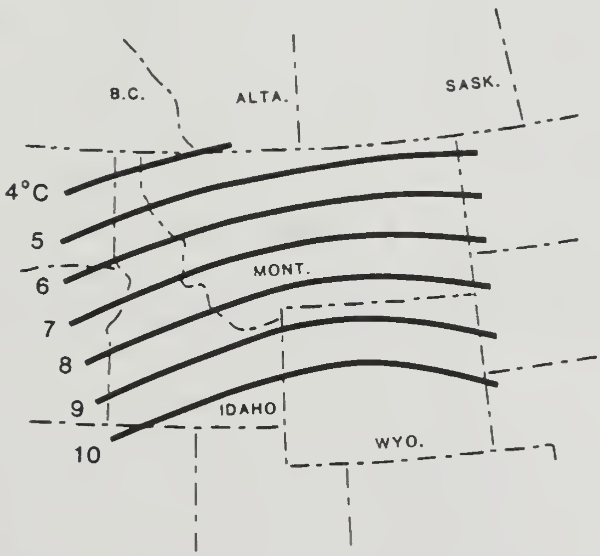


Figure 27.—Average temperature pattern (°C) in free atmosphere at 700-millibar pressure level (near 10,000 ft) over Northern Rockies, for January (A) and July (B). Based on 5 a.m., m.s.t., data for 13 years 1958-70; data were temperature values interpolated for 16 point locations from individual maps in monthly Climatological Data, National Summary.

average maximum decreases 2 °F (1.2 °C) between headquarters at 4,840 ft (1 476 m) and "station 10" at 6,340 ft (1 933 m), compared with a decrease of 6.7 °F (3.7 °C) in July-August.

Effects of slope aspect and timber cover are difficult to discern with the above stations. Findings elsewhere in the Northern Rockies, in the Priest River area of northern Idaho, are cited by Finklin (1983b). For example, the average diurnal temperature range during July-August was 9 °F (5 °C) greater in a clearcut than under an adjacent full-timber canopy, though 24-hour average temperatures were nearly identical.

Also showing local effects are data from 20 valley and slope stations in the Kananaskis Valley area of Alberta (MacHattie 1970); the data cover just one summer. July-August average maximum temperatures differed from their regression-line estimates by between 2.5 and 3.5 °F (1.5 and 2.0 °C) at six of the stations (present author's calculations). The overall lapse rate was 4.3 °F per 1,000 ft (7.8 °C per 1 000 m), identical to that in figure 26, but the temperature-elevation correlation was only −0.78.

The local variation that can occur on individual days is illustrated by measurements in the Many Glacier vicinity, on a clear, unusually hot July afternoon in 1960. Temperatures along the lower part of the Grinnell Glacier trail varied as much as 10 °F (6 °C) within a 1-mile (1.6-km) distance. The readings, taken in the shade, appeared to be influenced by the proximity and density of timber cover and also air movement off cool lakes (Josephine and Swiftcurrent). Earlier that afternoon, a marked local cooling effect of Grinnell Glacier was shown by readings (5 ft [1.5 m] above the snow-covered surface) as low as 59 to 61 °F (15 to 16 °C), compared with 79 to 82 °F (26 to 28 °C) in the nearby picnic area, close to precipitation gauge No. 1 (fig. 12). A strong temperature inversion during the preceding night was indicated by observed minimums of 63 °F (17 °C) inside the shelter at the gauge site and 44 °F (7 °C) at the Many Glacier campground. (Above data are from the author's original notebook.)

A moderating lake effect and exposure to breezes may explain the difference between the two stations at Many Glacier listed in table 28 (appendix). At the original station site, by the northeast shore of Swiftcurrent Lake, July and August maximum temperatures average up to 2.5 °F (1 °C) lower than those at the more sheltered Ranger Station (fig. 6); minimum temperatures average about 5 °F (3 °C) higher. Similar effects are indicated in Waterton Park, where the July-August minimums at Headquarters average about 6 °F (3 °C) higher than those at Waterton River Cabin.

Table 6.—Topographic and local site differences in average temperatures; in Coram Experimental Forest (Abbott Creek drainage) and vicinity, near west edge of Glacier National Park. Averages based on or adjusted to 30-year normal period, 1951-80

Station[1]	Elevation above Sea level	Elevation above Creek	Aspect	Slope	Site description	Average temperatures[2] Dec.-Jan. Max. Min. Mean	Average temperatures[2] July-Aug. Max. Min. Mean	Average temperatures[2] Annual Max. Min. Mean
	----- Feet -----			*Pct*		*°F*		
Hungry Horse Dam	3,160					30.2 17.6 23.9	79.2 49.0 64.1	53.0 32.4 42.7
West Glacier	3,180			0	In clearing, tall trees nearby	28.6 15.0 21.8	76.9 45.5 61.2	51.7 29.8 40.8
Spacing study	3,900		NW	20	In thinned 15-year-old larch stand		78.3 44.6 61.3	
Abbott Creek	3,950	20	W	5	Open area (clearcut), shrubs and young birch	27.2 15.2 21.2	76.3 43.0 59.7	
60-acre clearcut	[3]4,150		N	20	Clearcut within thinned 15-year-old larch		77.2 43.6 60.7	
Group selection	4,250	300	E	50	In 2-acre cutting unit, burned; subalpine fir type	28.2 21.0 24.6	75.5 51.3 63.4	49.8 35.0 42.4
Uncut	4,450	400	E	60	In mature timber, subalpine fir type	25.8 18.4 22.1	72.5 52.3 62.4	47.6 34.7 41.2
Shelterwood	4,900	800	E	50	About 50% harvested, understory burned; subalpine fir type	26.2 18.9 22.6	70.3 50.3 60.3	46.1 33.6 39.9
Clearcut	5,200	600	E	80	Near center of 17-acre clearcut, burned; subalpine fir type	26.0 18.3 22.2	70.6 50.4 60.5	46.1 33.3 39.7
Desert Mtn.	[4]6,350		S	5-10	Generally open		67.5 48.4 58.0	

[1]Listed in order of increasing elevation; Coram stations are those at 3,900 to 5,200 ft.
[2]All averages are based on or adjusted to midnight-midnight observation day. Data for Coram stations, from varying periods mostly during 1970's, were obtained by hygrothermographs (see text). To compensate for the generally slower instrumental response, as compared with standard liquid-in-glass thermometers, the Coram average maximum temperatures might be raised 1 °F; the minimum temperatures lowered 1 °F.
[3]Location in broad draw bottom.
[4]Location on ridgeline about 300 ft south of lookout.

Extreme Temperatures.—Highest monthly mean temperatures recorded to date around Glacier Park generally occurred in July 1936 (table 7). These means, as high as 69 °F (20 °C), were 5 to 6 °F (3 °C) above the present July normals. Lowest means occurred in January 1937 on the west side, near or slightly below 0 °F (−18 °C), and in January 1950 on the east side, near −10 °F (−23 °C); these were about 20 to 25 °F (11 to 14 °C) below normal.

Observed highest and lowest daily temperatures, by months, are included in tables 18 and 30 (appendix).

Annual extreme values are summarized in table 8. Maximum temperatures during the past 50 years have reached as high as 102 to 105 °F (about 40 °C) near the west edge of Glacier, generally slightly lower near the east edge. In an "average" year, these areas have an extreme somewhere near 90 to 95 °F (32 to 35 °C). At higher elevations, 85 °F (20 °C) has been observed at 7,500 ft (2 280 m), at Mount Brown Lookout. Minimum temperatures near the park edges have gone as low as −40 to −55 °F (−40 to −48 °C); in an average year, extremes ranging from −22 to −38 °F (−30 to −39 °C)

Table 7.—Extreme monthly mean temperatures[1] observed in Glacier National Park vicinity; highest and lowest, °F, since 1931; Dep. is departure from 1951-80 normal

Station	High mean	Dep.	Month, yr	Low mean	Dep	Month, yr
Babb 6NE	65.7	+6.0	July 1936	−11.8	−28.6	Jan. 1950
Browning	68.3	+6.1	July 1936	−8.4	−25.3	Jan. 1950
Polebridge	65.2	+4.7	July 1936	−3.0	−20.1	Jan. 1937
Summit	62.2	+5.4	Aug. 1961	[2]−6.0	−20.6	Jan. 1950
West Glacier	69.1	+6.0	July 1985	1.1	−19.4	Jan. 1937

[1]Calculated as arithmetic means of the average daily maximum and minimum values, based on 24-hour periods ending about 5 p.m.
[2]Includes estimate for 1 day of missing data.

may be expected. The annual minimums are much more variable from year to year than are the maximums, as indicated by the standard deviations in table 8.

FREEZING TEMPERATURE THRESHOLDS

Table 9 indicates that the period without any freezing temperatures, 32 °F (0 °C) or lower, averages 3 months or less. Valley locations such as Polebridge and Summit, subject to ponding of nighttime cool air drainage (Schroeder and Buck 1970; Geiger 1965; Yoshino 1975), experience freezing temperatures during every month of the year. For the threshold of 28 °F (−2 °C), sometimes used to define a "killing frost" for agricultural and fire-weather purposes, the open period averages about 4 months (mid- or late May to mid-September) near the east edge of Glacier Park; between 2½ and 4½ months in west-side valley locations. Standard deviations in table 9 indicate that in two-thirds of the years, the various threshold temperatures will occur within about 2 weeks of the average dates; lengths of season between the freezes will be within about 3 weeks of the average. Longer seasons can be expected on adjacent slopes, in connection with nighttime temperature inversions and "thermal belts."

Table 8.—Annual extreme maximum and minimum temperatures, °F. Average (Avg.), standard deviation (SD), and highest and lowest observed. Based on available data during 1931-80 or indicated years

	Extreme maximum				Extreme minimum			
Station	No. yrs	Avg. annual	SD	Highest, mo, yr	No. yrs	Avg. annual	SD	Lowest, mo, yr
Babb 6NE	47	90.5	3.1	99 Aug. 1969	50	−33.6	7.9	−52 Jan. 1950
Browning	48	91.4	3.0	98 July 1934	48	−30.5	7.5	−44 Jan. 1950, 72
Polebridge	38	93.8	4.1	102 Aug. 1969	39	−34.2	8.6	−46 Jan. 1950, 57
Summit	43	87.6	3.4	96 Aug. 1961, 69	42	−38.5	8.5	−55 Jan. 1959
West Glacier	50	92.3	3.2	101 July 1934	50	−21.5	10.3	−40 Feb. 1933
Essex (1958-70)	13	95.9	3.8	105 Aug. 1961				
Many Glacier (1968-73)	4			92 Aug. 1969	6			−50 Jan. 1972
Saint Mary (1964-83)	18	92.4	3.6	103 Aug. 1969	12			−43 Jan. 1972
Sherburne Lake (1939-51)	13	86.7	3.4	92 Sept. 1950				
Waterton Park HQ (1951-74)	19			95 Aug.[1]	19			−37 Jan., Dec.[1]
Desert Mtn. LO (1936-73)	37	82.8	3.4	94 Aug. 1969				
Mt. Brown LO (1931-57)	24	75.6	3.7	85 July 1934				
Sperry Chalet (1960-75)	15	81.7	3.6	90 Aug. 1961				

[1]Year of occurrence not available.

Table 9.—Freezing temperature thresholds. Mean, median (Med.), earliest recorded, and latest recorded dates of last-spring and first-autumn occurrences of specified minimum temperatures (Min.), °F; season division taken as July 31. For period 1951-80 (with 29 or 30 years of data), except as noted. SD is standard deviation, days. E denotes estimated due to missing data

		Date of occurrence[1]										No. days intervening	
		Last in spring					First in autumn						
Station	Min.	Mean	SD	Med.	Earliest	Latest	Mean	SD	Med.	Earliest	Latest	Mean	SD
Babb 6NE	32	6/21	17	6/20	5/18	7/26	8/28	12	8/31	8/ 1	9/20	68	21
	28	5/27	19	5/21	4/24	7/ 6	9/16	12	9/18	8/25	E10/ 8	112	23
	24	5/ 6	14	5/ 6	4/12	6/11	9/28	12	9/28	9/ 3	10/22	146	18
	20	4/24	15	4/25	3/31	6/ 7	10/ 7	13	10/ 8	9/12	11/18	166	21
	16	4/13	15	4/12	E3/14	5/10	10/17	18	10/13	9/12	11/18	187	24
Browning	32	6/ 8	18	6/ 6	5/13	7/31	9/ 6	12	9/ 8	8/ 2	9/23	90	22
	28	5/18	15	5/19	4/24	6/30	9/19	11	9/18	9/ 3	10/19	124	18
	24	5/ 4	13	5/ 4	E4/ 8	5/29	9/29	14	10/ 1	9/ 3	10/27	147	20
	20	4/21	14	4/23	3/15	5/13	10/ 9	15	10/10	9/14	10/27	170	21
	16	4/15	15	4/14	3/14	5/13	10/24	17	10/24	9/14	11/28	192	25
Polebridge	32	7/15	16	7/18	5/30	7/31	8/12	10	8/ 9	8/ 1	9/ 7	28	19
	28	6/17	21	6/13	5/12	7/31	9/ 2	12	9/ 3	8/13	10/ 2	78	21
	24	5/14	13	5/11	4/23	6/14	9/23	12	9/24	9/ 3	10/17	133	16
	20	4/27	13	4/29	3/28	5/29	10/ 5	17	10/ 6	9/ 3	11/ 9	161	21
	16	4/12	12	4/14	3/17	5/ 2	10/20	17	10/22	9/14	11/23	189	21
Summit	32	7/20	13	7/25	6/14	7/31	8/10	10	8/ 8	8/ 1	9/ 8	21	18
(1951-78)	28	6/28	24	7/ 1	5/10	7/30	8/21	16	8/19	8/ 2	9/24	54	28
	24	5/24	18	5/23	4/21	7/ 8	9/13	15	9/ 9	8/19	10/23	112	25
	20	5/ 9	17	5/ 6	4/ 1	6/13	9/28	17	9/30	9/ 2	10/30	142	22
	16	4/27	14	4/29	4/ 1	6/ 1	10/ 7	17	10/ 7	9/ 3	11/ 5	162	21
West Glacier	32	6/ 6	17	6/ 2	5/ 5	7/19	9/12	11	9/13	8/16	10/ 1	98	20
	28	5/13	14	5/11	4/17	6/13	9/28	13	10/ 1	9/ 4	10/22	138	20
	24	4/21	12	4/22	3/28	6/ 1	10/16	16	10/17	9/14	11/14	178	23
	20	4/ 7	14	4/ 8	3/15	5/ 2	10/30	15	11/ 1	9/14	11/28	206	19
	16	3/25	16	3/23	2/17	5/ 1	11/14	14	11/13	10/22	12/23	234	21
Mullan Pass	32	6/21	12	6/25	5/29	7/12	9/16	4	9/16	9/11	9/24	87	13
(1942-57	28	6/ 7	11	6/ 7			9/29	12	9/28			114	21
for 32;	24	5/ 8	10	5/ 4			10/ 9	17	10/10			154	15
others	20	4/21	16	4/21			10/29	17	10/30			191	23
1948-57)	16	4/10	13	4/ 6			11/ 6	13	11/ 4			210	14

[1]Month number/day number; thus 6/14 is June 14.

SOIL TEMPERATURE; STREAM TEMPERATURE

The annual regime of soil temperature measured at the former Upper Columbia Snow Laboratory is portrayed in figure 28A. Though based on a short period of record, the monthly means should represent the pattern in similar forest areas near 5,000 ft (1 500 m) elevation. Monthly mean air temperatures at UCSL headquarters are included for comparison. Average diurnal ranges in soil temperature reached about 25 °F (14 °C) at the ground surface in July-August but only 4 °F (2 °C) at a 6-inch (2.4-cm) depth; 1 °F (0.6 °C) at 2 ft (61 cm).

Most notable are the relatively high soil temperatures in winter, showing the insulating effect of the heavy snow cover and the surface vegetation (grass and brush). Temperatures at the soil surface barely fall to 32 °F (0 °C), and a few inches below this the ground evidently remains unfrozen. Snow cover during the corresponding 4 years (1947-49 and 1951) was generally above the estimated normal, but this apparently did not matter; winter soil temperatures were similar with below-normal snow cover (in 1948). As shown in figure 21, the snow cover at nearby Summit averages about 15 inches (38 cm) by December 1, retarding the soil temperature decrease prevailing into November (fig. 28A).

Mueller (1970) shows a similar effect of snow cover for sites (soil plots) elsewhere in western Montana, between Superior and Mullan Pass, using 20-inch (50-cm) temperatures. Air-soil temperature differences were, however, larger at UCSL—because of the lower air temperatures here. Interpolated for a 20-inch depth, these differences average 16 °F (9 °C) during December-February.

During spring and summer, portrayed soil temperatures average lower than those of the air, with the difference reaching 5 or 6 °F (3 °C) at 20 inches. (The difference was twice as large at five of Mueller's plots.) For the year, temperatures at 20 inches average 40 °F (4 °C), or 4 °F higher than the air temperature; this is identical to the 20-inch average at Coram Experimental Forest, upper clearcut station (Hungerford and Schlieter 1984).

Interpolation in figure 28A gives an average period of about 127 days (June 8-October 12) with 20-inch (50-cm) soil temperature 42.0 °F (5.5 °C) or higher—a threshold considered significant for vegetative growth (Mueller

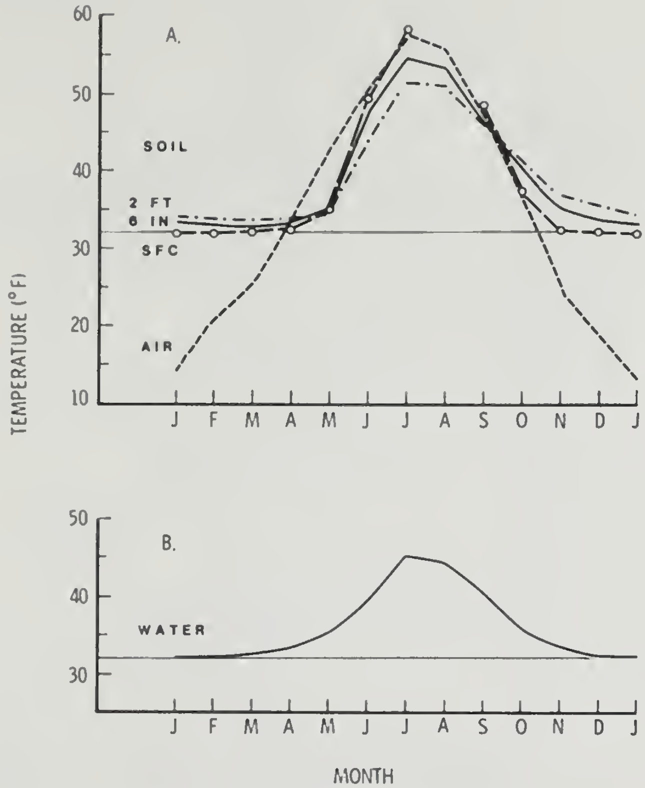


Figure 28.—Panel A: Monthly mean soil temperatures near Marias Pass—at former Upper Columbia Snow Laboratory, "station 39," in spruce, larch, and lodgepole forest passageway about 25 ft (7 m) wide. At indicated depths; based mostly on 2 to 4 years during 1947-51. Comparative mean air temperatures are at nearby headquarters, 4 ft (1.2 m) above ground or snow surface, adjusted to normal period 1951-80. Thin horizontal line is drawn at 32 °F (0 °C). Panel B: Same, for water temperature of Skyland Creek (at flume), near headquarters; based on 2 to 3 years.

1970). This duration is similar to that—124 days—found at Mueller's coolest site, at almost the same elevation.

Rather high ground-surface temperatures may occur during summer days at open sites, particularly on southerly slopes. On a southwest-facing grassland slope, at 7,100 ft (2 165 m) in southwestern Montana, Mueggler (1971) shows daily maximum temperatures of a bare soil surface averaging 127 °F (53 °C) in July and 119 °F (48 °C) in August—the daily minimums averaged about 36 °F (2 °C). Under artificial shade nearby, July and August soil-surface maximums averaged 77 °F (25 °C); minimums about 45 °F (7 °C). Temperatures at a 20-inch (50-cm) depth had May-October averages similar to those at UCSL. On summer days in the Coram Forest, Hungerford and Schlieter (1984) report that litter-surface temperatures on unvegetated clearcuts often reached 140 °F (60 °C); monthly average daily maximums sometimes exceeded 115 °F (46 °C).

Figure 28B gives an example of monthly average temperature of a small mountain stream—again near the UCSL headquarters. The annual curve, like that of soil temperature, shows a limiting lower value of 32 °F (0 °C) in winter; flow of water continues. Average temperatures rise to only 45 °F (7 °C) in July and August, apparently more indicative of soil temperatures at the stream's sources (Geiger 1965); Skyland Creek's various branches or forks emerge at elevations generally near 6,000 to 6,500 ft (1 800 to 2 000 m). This stream has an average diurnal temperature range of 5 or 6 °F (3 °C) in July and August, with water temperatures averaging 47 or 48 °F (9 °C) in midafternoon. Highest on any day during the two summers of record was 52 °F (11 °C).

Relative Humidity

The only year-round relative humidity data available within or close to Waterton-Glacier are from the Upper Columbia Snow Laboratory. Though based on only 2 to 4 years, the monthly averages, smoothed and plotted in figure 29, do follow the general trend shown by longer records at the adjacent Kalispell and Cut Bank, MT, airport stations. Relative humidity tends to vary inversely with temperature (Schroeder and Buck 1970; Finklin 1983a), and this largely accounts for the early morning-afternoon differences seen in figure 29; also for the higher afternoon values at higher elevations as at UCSL

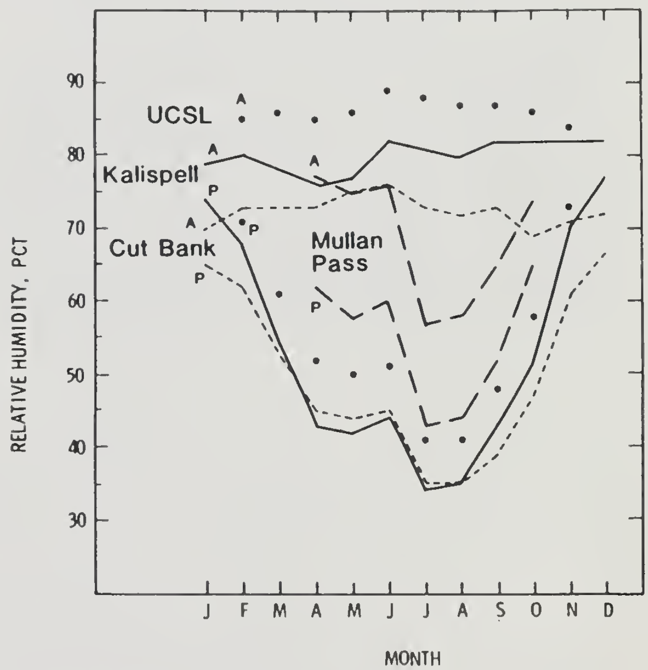


Figure 29.—Monthly average relative humidity; annual regime. Averages at 5 a.m. (A) and 5 p.m. (P), m.s.t.; based on varying lengths and periods of record (longest, 18 years at Kalispell airport). Values at Upper Columbia Snow Laboratory (UCSL), obtained from 2 to 4 years of hygrothermograph data, have been smoothed by 1-4-1 weighting factor; similarly at Mullan Pass, ID, with published 5-year averages.

and Mullan Pass, ID, a former station at 6,000 ft (1 830 m). The much lower summer nighttime humidity at Mullan Pass is partly a result of the higher nighttime temperatures here, above the inversions affecting the valleys.

Relative humidity over the park area averages highest in the winter. Midafternoon average values during November-February are in the 60 to 75 percent range or higher; lowest averages occur near the eastern edge. The afternoon averages decrease noticeably during spring and, after a slight reversal during the showery month of June, reach July-August levels of 35 to 40 percent at lower elevations and near 45 percent at 6,000 ft (1 830 m).

TEMPERATURE AND RELATIVE HUMIDITY DURING FIRE SEASON

Averages and Frequencies of Afternoon Values.— Figure 30 shows the 10-day average midafternoon temperature and relative humidity pattern during the fire season. Though complete-season data are available only for a west-side valley area, curves for other locations appear to be generally parallel (as indicated by fig. 29). The averages reveal an accelerated change near the end of June toward the warm, dry conditions covering much of July and August. This change corresponds with the decrease in rainfall seen in figure 18. Both are related to the northward retreat of the polar frontal zone and upper-air jet stream (Schroeder and Buck 1970; Critchfield 1974).

Summer afternoon averages at fire-weather stations are mapped in figure 31. The 1600 m.s.t. temperatures average generally 2 or 3 °F lower than the maximums (midnight-to-midnight) in figure 24. An exception, at West Glacier, is attributed to an exposure difference between the two separate station locations used here. Among the 11 available stations in figure 31 (the Kalispell airport not included), the correlation between temperature and elevation is −0.99 and the overall lapse

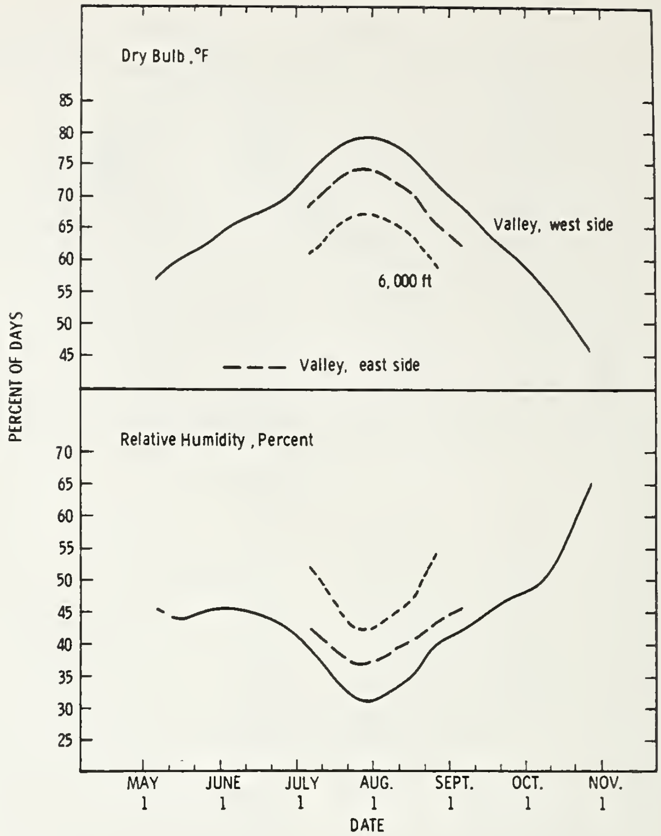


Figure 30.—Midafternoon dry bulb temperature and relative humidity; 10-day averages during fire season, smoothed by 1-4-1 weighting factor. Based on period 1951-80; mostly 1600 m.s.t. data (1300 beginning 1974). Curves for west-side valley are from combined record at Coram R.S. (1951-57) and Hungry Horse R.S. (1958-80); east-side valley, St. Mary R.S.; 6,000 ft, combined record at Desert Mountain (1951-73) and Firefighter Mountain (1975-80).

Figure 31.—Average midafternoon dry bulb temperature (DB), °F, and relative humidity (RH), percent, during July. Based on or adjusted to 1600 m.s.t. and period 1951-80.

rate (by regression line) is 4.2 °F per 1,000 ft (7.7 °C per 1 000 m)—close to that obtained for maximum temperatures in figure 26. The correlation found between relative humidity and elevation is 0.96, with a regression-line increase of 3.3 percent per 1,000 ft (305 m). Again, average values at specific locations can differ by several degrees or several percent from estimates based on these gradients. This variation is shown on a smaller scale by afternoon observations during one summer in the McDonald drainage (Kessell 1979). Some local effects on summer temperatures have been described earlier.

Statistics of afternoon temperature ("dry bulb") and relative humidity are given in table 33 (appendix). (Similar details for fire-season maximum, minimum, and mean temperatures are included in tables 30 and 31.) Portrayed in figure 32 is the exceptional spell of hot and dry afternoon conditions that persisted during the 10-day period August 11-20, 1967—a year of large fires in the Northern Rockies; these included the Glacier Wall Fire (Habeck 1970; Ruhle 1972). Lowest humidity recorded on any day, during this or other years, is about 5 to 8 percent at lower elevations and 8 to 10 percent near 6,000 ft (1 830 m).

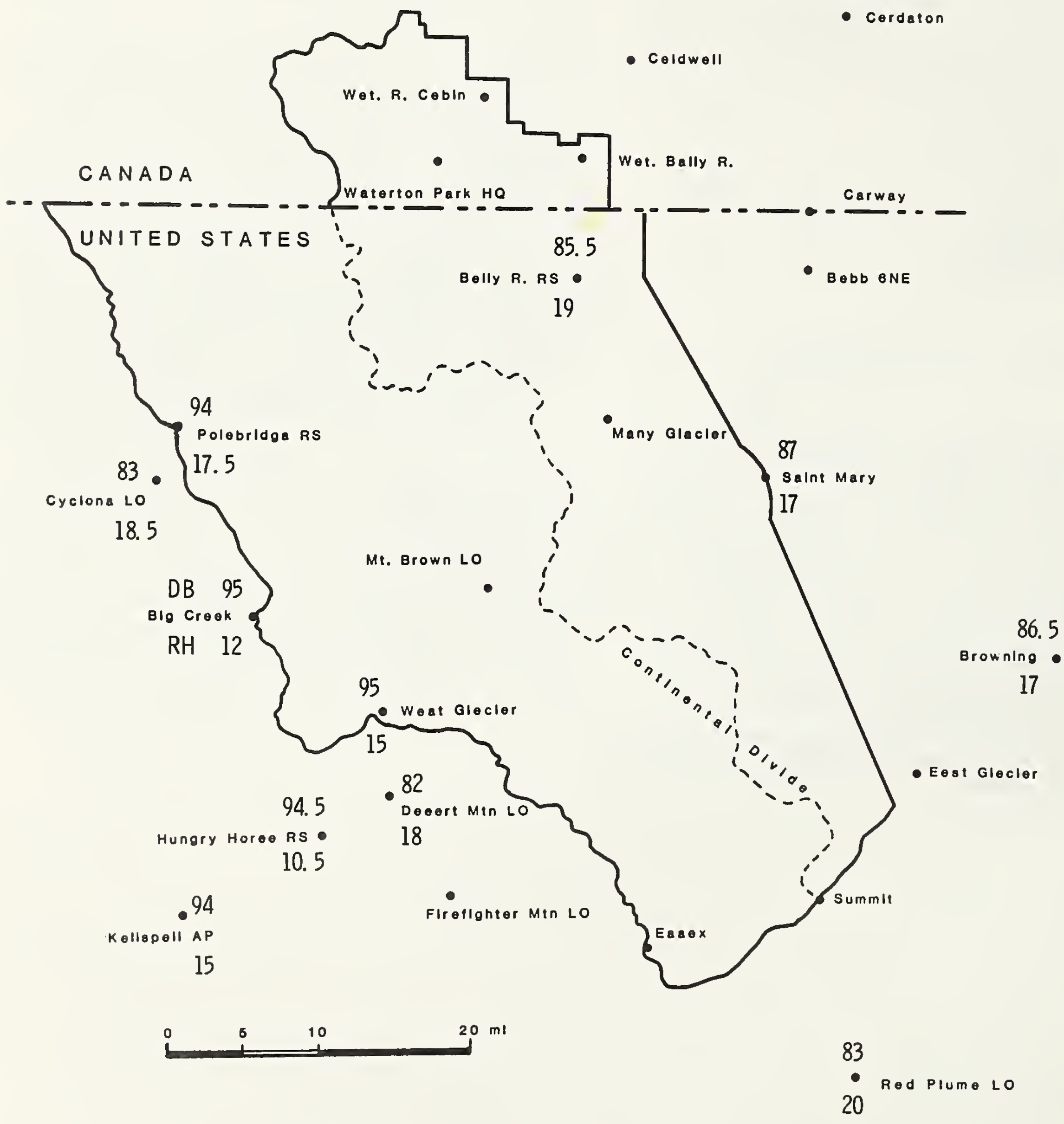


Figure 32.—Extreme 10-day average midafternoon dry bulb temperature, °F, and relative humidity, percent; observed at 1600 m.s.t., August 11-20, 1967.

The frequencies of various midafternoon temperature and relative humidity values are shown in figure 33. The percentages may be regarded as long-term probabilities. A humidity below 30 percent, for example, in the west-side valley area has about a 23 percent chance of occurrence in mid-June; a 57 percent chance in late July and early August; and less than a 20 percent chance by late September. Additional details are given in table 34 (appendix). A generally close relationship is found (fig. 34) between the frequencies of certain values and the corresponding 10-day averages; the graphs do differ between lower and higher elevations. The appropriate set of curves (or a compromise) may be used to estimate frequencies at other places, when given the average values.

Further, a relationship between average temperature and the relative humidity frequency is shown in figure 35. This enables a graph-based estimate of combined dry bulb and humidity frequencies. For such an estimate, the dry bulb frequency, obtained from figure 34, is multiplied by the frequency of the humidity value. More than one step may be necessary in each graph—for example, if the prescribed temperature range includes more than one class in figure 35 and if the humidity is specified within a range rather than below some threshold.

As an illustration, for the west-side valley area, the prescribed afternoon dry bulb is between 70 and 89 °F; the relative humidity between 20 and 39 percent; and the time of year is August 21-31. From figure 30, the appropriate average dry bulb is 72 °F. For this average, in figure 34, the frequency of a dry bulb ≥ 70 °F is 61 percent; ≥ 90 °F, about 5 percent. Frequency of a 70-89 °F value is, thus, the difference, or 56 percent. Entering figure 35, midway between the 70-79 °F and 80-89 °F marks on the horizontal scale, the frequency of an accompanying humidity ≤ 20 percent is found to be 21 percent; frequency of humidity ≤ 40 percent, 84 percent. Frequency of 20-39 percent humidity is the difference, or 63 percent. The chance of filling the above prescription is then the product of 56 percent and 63 percent, divided by 100 percent, giving an answer of 35 percent.

The above frequencies would differ considerably under differing daily weather-map patterns—as would those of rainfall amounts and thunderstorm occurrence. There are

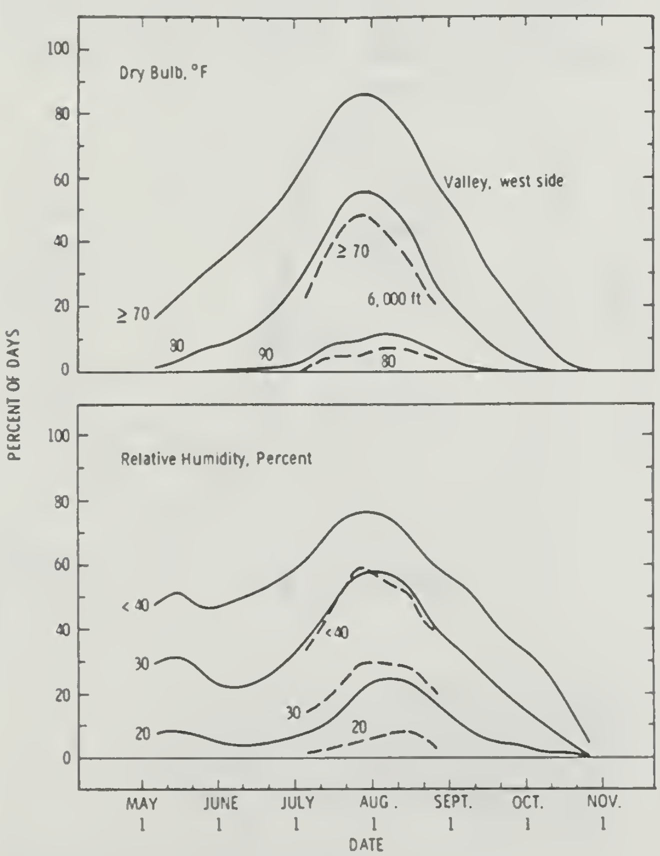


Figure 33.—Midafternoon dry bulb temperature and relative humidity; 10-day frequencies of specified values at about 1600 m.s.t. Based on years 1951-80; derived as in figure 30.

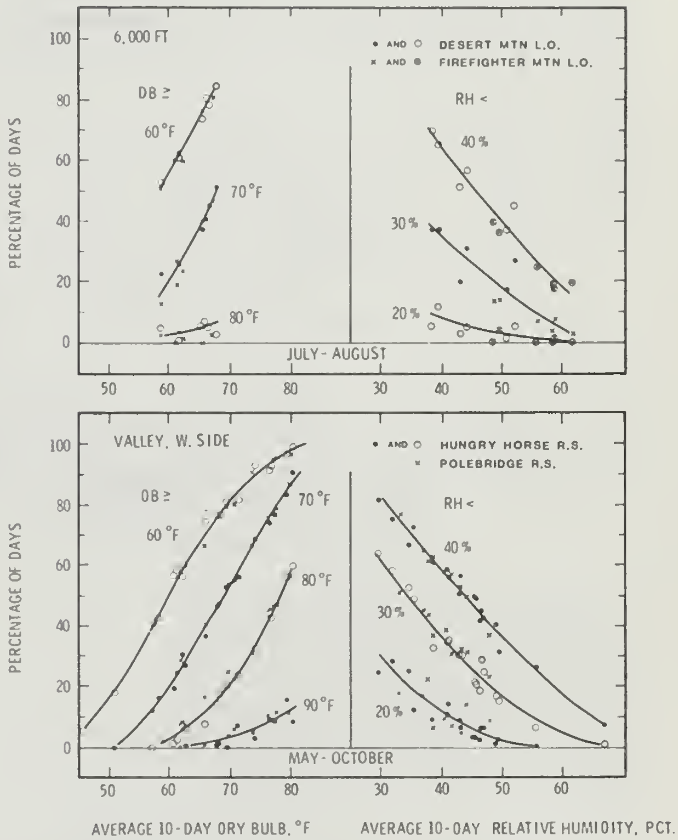


Figure 34.—Relationship between 10-day average dry bulb temperature and frequency of days with specified values (left half of figure), during indicated months of fire season, at afternoon observation time; corresponding relationship for relative humidity (right). For west-side valley area (bottom) and approximately 6,000 ft (1 830 m) (top); curves fitted by eye. Based mostly on data at 1600 m.s.t.; at 1300 beginning in 1974. Period of record 1958-80 at Hungry Horse, 1951-80 (July-September) at Polebridge, 1951-70 at Desert Mountain, and 1975-82 at Firefighter Mountain.

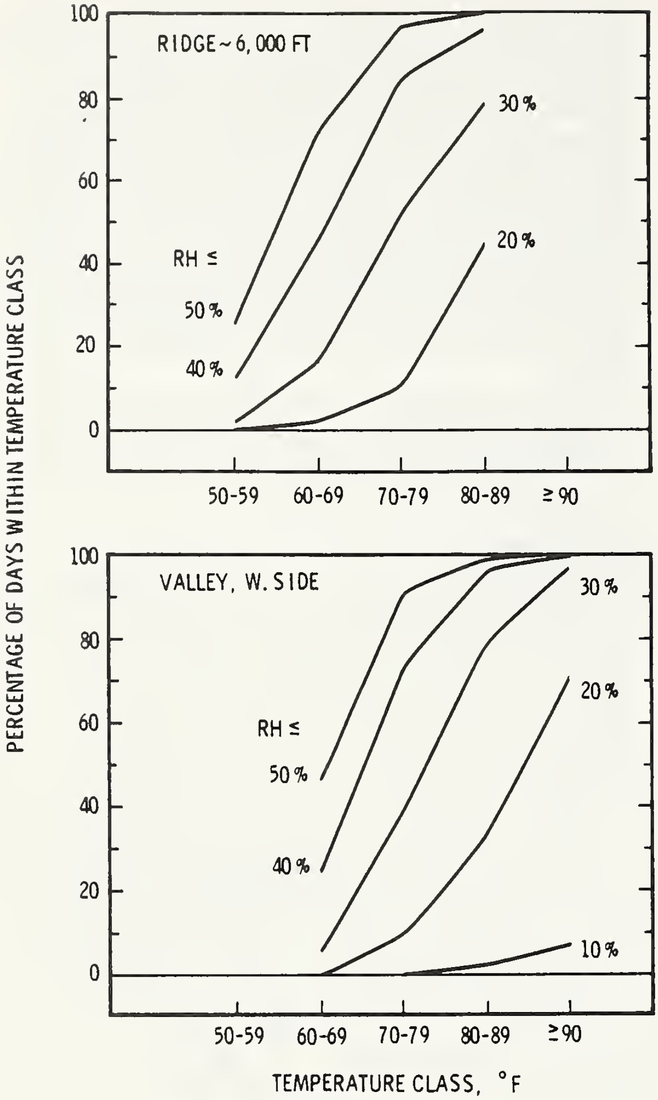


Figure 35.—Percentage frequency of July-August days with specified afternoon relative humidity, for given dry bulb temperature range (class). Data as in figure 34, except west-side valley graph represents an average based on 1951-70 period at Polebridge and 1963-82 at Hungry Horse; 6,000-ft graph based on combined record at the two lookouts.

no specific findings presented for the Glacier Park area, but a general indication of expected contrasts is given by a Selway-Bitterroot Wilderness study (Finklin 1981). For example, with an upper-air ridge over or just west of that area, the frequency of July-August afternoon humidity ≤ 30 percent at two ranger stations was about 95 percent; with an upper-air trough, the frequency was about 25 percent (compared with 63 to 64 percent for all days combined). All of these percentages are probably lower at corresponding Glacier Park locations, as inferred from figure 33 and table 34 (appendix).

Diurnal Variation of Temperature and Humidity.—The average diurnal course of summertime temperature and relative humidity is depicted in figure 36. The contrast seen between the valley and lookout locations illustrates earlier comments about daily range, nighttime inversion effects, and the inverse variation of relative humidity with temperature. Noteworthy is the valley-ridgetop difference of 30 percent in average humidity near dawn, suggested earlier in figure 29. The curves show the warmest, driest time of day is usually near 1500 to 1600 m.s.t. The fire-weather observation time of 1600, in effect prior to 1974, thus tended to represent the afternoon extreme conditions.

MacHattie (1966) presents some examples of local topographic and site variation in daytime and nighttime relative humidity in adjacent Alberta.

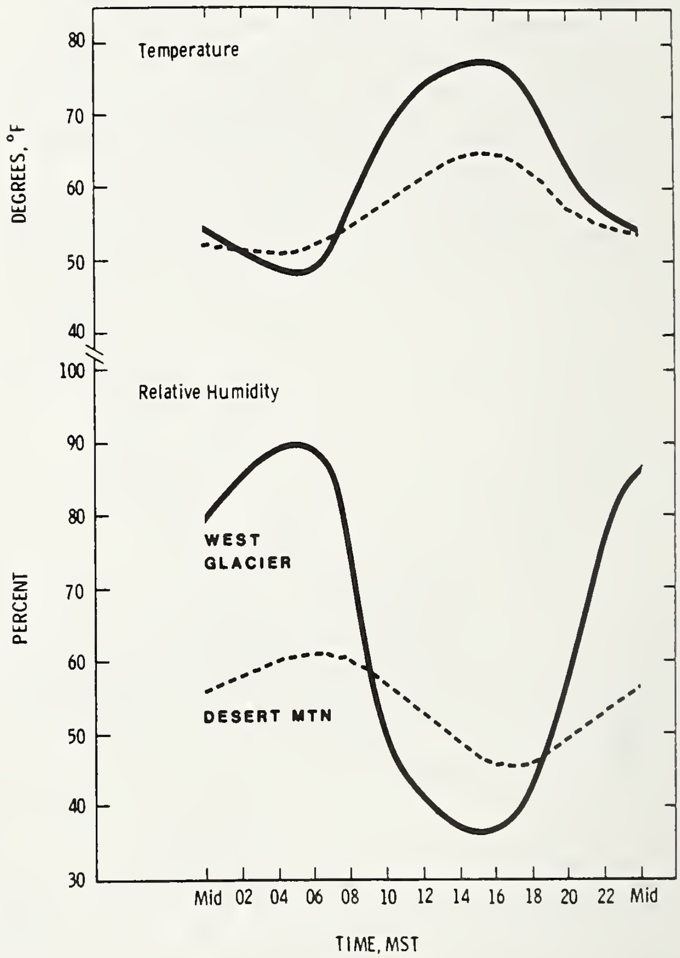


Figure 36.—Average diurnal variation of temperature and relative humidity, July and August combined, at valley and ridgetop fire-weather stations. Based on 3 or 4 years of hygrothermograph data adjusted to 1951-80 normal period.

Effects of Change in Fire-Weather Observation Time.—At the observation time now in standard use, about 1300 m.s.t. (1400 m.d.t.), temperatures may average about 2 °F (1 °C) lower than previously; relative humidity, 3 to 5 percent higher (fig. 36). The time change will also affect the frequencies of particular observed values. Frequencies applicable to 1300 may be estimated with the aid of figure 34, assuming that the same graphic relationship holds as at 1600. For example, figure 34 indicates that in the west-side valley area during September 1-10, the frequency of ≤ 30 percent observed relative humidity is 33 percent at 1600 (when the average humidity is 42 percent, from figure 30). If the average is 4 percent higher at 1300, the above frequency is reduced to 24 percent.

Figures 30, 33, 34, and 35, covering a 30-year period, draw upon a mixture of 1600 and 1300 m.s.t. data—not the ideal, though the balance is strongly weighted toward 1600 or "midafternoon." Table 10 offers some explanation for this mixture. A large difference exists between the 1951-70 (1600 m.s.t.) averages and the 1974-83 (1300 m.s.t.) averages. In particular, July and August relative humidity observed on the west side of Glacier averaged generally 11 to 12 percent higher in the latter period; dry bulb, about 5 °F (3 °C) lower. Only about one-half of the difference can be attributed to the time change (fig. 36 and diurnal curves for other Northern Rocky Mountain locations). Much can be attributed to abnormally moist and cool summer afternoons during the 1974-83 period. In addition, there appear to be erroneously high values in some of the recent humidity data, particularly at Polebridge. (Large, obvious errors were corrected before averages were calculated.) The 1974-83 averages are compared further, by 10-day periods, in figure 37; anomalies are particularly large in mid-July and mid-August.

Thus, statistics to date for 1300 m.s.t. would probably be unrepresentative of the longer term. On the other hand, the recent cool, moist conditions and 10-day variations have their role in the standard 30-year (1951-80) climatic baseline.

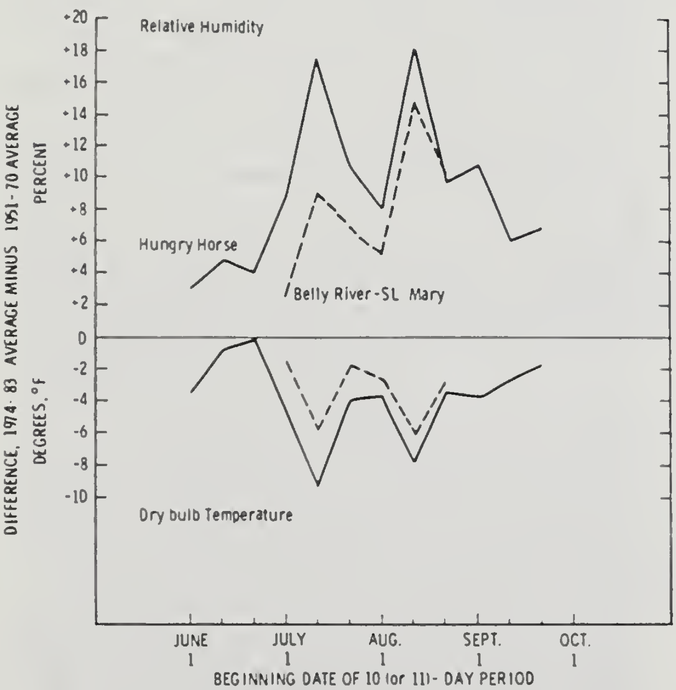


Figure 37.—Deviations of recent fire-weather averages, during 1974-83 at 1300 m.s.t., relative to averages during 1951-70 at 1600 m.s.t.; by 10-day periods at indicated ranger stations. Averages for Hungry Horse include 1951-57 data at Coram R.S.

Wind

The pattern of monthly average windspeeds around Waterton-Glacier is depicted in figure 38. Comparisons between stations are affected by differences in period of record and anemometer exposure, but some large areal contrasts are, nevertheless, evident. (The present standard exposure [Fischer and Hardy 1976] is 20 ft [6 m] above open, level ground or nearby treetops.) These contrasts include both the actual speeds and the seasonal trends.

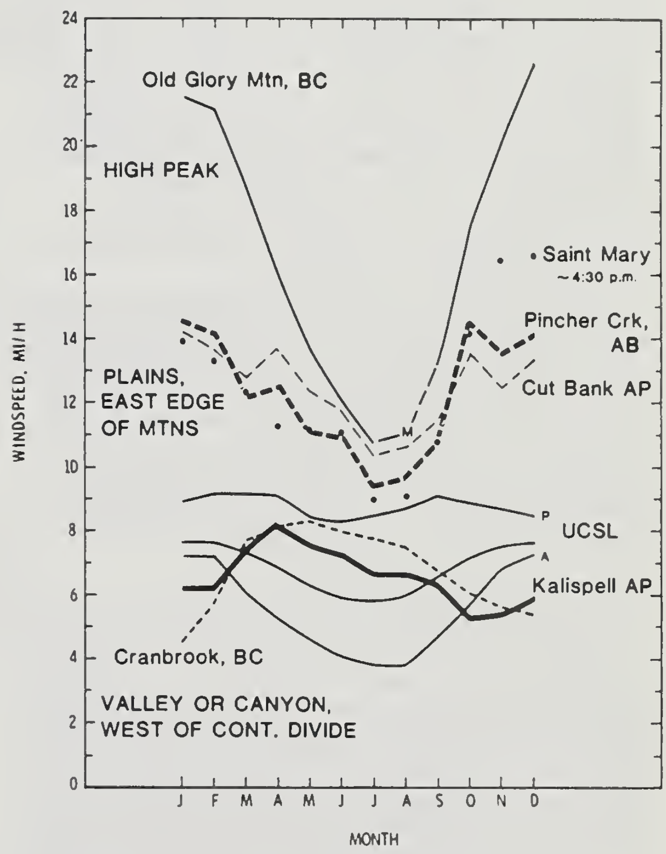


Figure 38.—Monthly average windspeed: annual regime. Speeds are 24-hour averages except as noted (M denotes missing value). Based on varying lengths and periods of record, generally between 10 and 16 years, during about 1950 to 1982. Data from Upper Columbia Snow Laboratory (UCSL), "station 1A," include 4-6 a.m. average (A) and 2-4 p.m. average (P), based on 3 or 4 years (1947-50); values here and at St. Mary have been smoothed by 1-4-1 weighting factor.

Following the trend in the free atmosphere (fig. 8), the mountains and areas east of the Continental Divide have a pronounced windspeed maximum in winter and a minimum in summer (July-August). Winds on the peaks may average near 20 mi/h (32 km/h) during November through February. The western valleys tend to have a windspeed minimum in winter, with 24-hour averages near 5 mi/h (8 km/h); a maximum in spring. In an upper canyon area just southwest of Marias Pass (at UCSL), afternoon and 24-hour windspeeds above the trees show only a small seasonal change; however, the generally lighter early morning winds have a noticeable winter maximum and summer minimum. Winds typically decrease at night over most of the park area but, conversely, they may increase on some of the high mountain terrain. Diurnal wind variation will be discussed further, among details given for the fire season.

The east side of Waterton-Glacier is noted for periods of exceptionally strong (and relatively warm) chinook winds during winter. These may gust to 100 mi/h (160 km/h) or higher—as reported, for example, at St. Mary in December 1979 and Many Glacier in December 1980; also at the Waterton Park townsite (personal communication). During the period 1972-82, St. Mary had an average of 2 days per month, November through February, with the observed 5 p.m. wind at least 40 mi/h (64 km/h). Cold north winds, however, are usually only about 5 mi/h (8 km/h) here. Strong, gusty winds may occasionally occur on the west side of Glacier—particularly with a cold airflow from the northeast (across the Continental Divide), in or near canyon or pass areas aligned with this flow.

Prevailing (most frequent) wind direction is generally from the west or southwest throughout the year, but the direction may be affected by obstructing terrain and valley or canyon orientation (as well as time of day, discussed later). Thus, winds prevail from the southwest at St. Mary, the UCSL site, and Waterton River Cabin (Poliquin 1973); from the south, most of the year, at both Cranbrook, BC, and Waterton Park Headquarters; from the northwest on Old Glory Mountain, BC.

WIND DURING FIRE SEASON

Typical summer afternoon wind conditions around Waterton-Glacier are portrayed in figure 39. Windspeeds in midafternoon average 6 or 7 mi/h (10 or 11 km/h) in the western valley area; 9 or 10 mi/h (14 to 16 km/h) on the east side. Not shown, speeds at the sheltered, former Coram R.S. averaged only 3 mi/h (5 km/h). Average speeds at the available lookouts do not show a consistent increase with elevation as may occur in the free atmosphere. Local topography is an influential factor—as in the contrast between Desert Mountain and nearby Apgar Lookout, where the speed averages twice as high at a lower elevation. A spur ridge west of Desert Mountain may break the force of the wind; while at Apgar Lookout, facing a valley constriction, the wind appears to be speeded up by a convergence effect.

Afternoon wind directions are mostly from the southwest. The dominating large-scale or "gradient" wind apparently inhibits development of an upslope "valley breeze" (Schroeder and Buck 1970; MacHattie 1968; Reifsnyder 1980) on the east side of Waterton-Glacier. An up-valley and channeling effect is indicated on the west side at Big Creek, with a southeast wind direction.

Frequency Distributions.—Combined frequencies of afternoon windspeeds and directions are presented in table 35 (appendix). In addition, frequencies of various speeds may be estimated from the relationship with average speed shown in figure 40. These frequencies pertain to the standard 10-minute average wind observed at fire-weather stations in the United States. Higher speeds can, of course, be expected over shorter durations and also at various other times on individual days. Illustrating the latter condition, 1500-1600 m.s.t. windspeeds at the UCSL station (reported as 1-hour averages) were ≥ 10 mi/h (16 km/h) on 37 percent of the July-August days; for any 1-hour period between 1100 and 2000 m.s.t., this frequency was 59 percent.

"Three-way" frequencies of combined afternoon dry bulb temperature, relative humidity, and windspeed values are given in table 36 (appendix). Use of this table may require summation over several ranges. Alternatively, these frequencies may be estimated with the aid of figure 40. The percentage obtained from this figure is multiplied by that of the dry bulb and humidity combination, described earlier. This procedure is valid because of a generally low correlation between afternoon windspeed and both other elements.

To illustrate, the prescribed conditions may be the previously given ranges of 70-89 °F and 20-39 percent in the west-side valley area, together with a wind of less than 10 mi/h. With an average speed of 6 mi/h (from fig. 39), the desired frequency from figure 40 is 85 percent (obtained as 100 percent minus the 15 percent frequency for a speed ≥ 10 mi/h). The three-way frequency is thus the product of 85 percent and the previously obtained 35 percent (for dry bulb and humidity), divided by 100 percent; this gives an answer of 30 percent.

Table 10 indicates that summer afternoon windspeeds at Glacier Park valley locations average 1 or 2 mi/h lower at 1300 m.s.t. than at the former 1600 observation time. The difference in periods of record may be a minor factor here. A change in measurement, however, appears to explain some of the 50 percent decrease in average speed at Polebridge R.S.; a hand-held wind meter (Fischer and Hardy 1976) is now used here. Frequencies of specified higher speeds should be correspondingly lower at 1300 and, again, may be estimated from figure 40—entering at the lowered average speed.

Extreme Windspeeds.—At lower elevations, the available (once-daily) observations would suggest a rather small frequency of sustained strong summertime winds (≥ 25 mi/h [40 km/h])—for example, about 0.5 percent of observations at Belly River and St. Mary (table 35, appendix) and even less on the west side. Such extreme events are of great importance in wildfire situations—as, most recently, in 1984. In the 1984 case, the August 27 observation-time windspeeds at West Glacier, 27 mi/h (43 km/h), and Big Creek, 30 mi/h (48 km/h), were the highest for July-August in about 20 years of record. A corresponding speed of 30 mi/h at St. Mary was exceeded only in July 1974—in records covering 35 summers.

Figure 39.—July-August midafternoon average windspeed (mi/h), and prevailing direction (arrow points downwind), at 1600 m.s.t., Glacier Park area; based mostly on available 1951-70 data. Prevailing direction at Waterton Lakes stations, for unspecified time, is based on 3 to 6 years (Poliquin 1973); speed not available.

At higher elevations, the frequency of strong winds at Mount Brown Lookout (table 35, appendix) was just 1 percent (as defined above). There are, of course, windier locations, as indicated in figures 39 and 40. Maximum 5-minute average speeds at Mount Brown (Hanna 1939), recorded at any time of day, show an 8-year July-August extreme of 46 mi/h (74 km/h); this was associated with a thundershower. The average monthly extreme was 35 mi/h (56 km/h). Weather reports for the corresponding days here indicate these peak winds may occur with cool, wet conditions—as well as warm, dry.

Diurnal Variation of Wind.—Winds at the valley and canyon locations generally average highest around midafternoon (near the former fire-weather observation time) and lowest during the nighttime and early morning hours. Calm or very light summer nighttime wind conditions are common, particularly on the west side. Morning observations taken prior to 1948, at 0800 or 0900, show an average July-August windspeed of 1 mi/h (2 km/h) at Polebridge R.S.; 5 or 6 mi/h (9 km/h) at Belly River and St. Mary. Decreased early morning windspeeds have been noted at UCSL (fig. 38).

West of the Continental Divide, the summer nighttime winds are likely to have a reversed direction—with predominance of local downslope and downvalley air movement (or "drainage winds"), generally from an easterly or northerly quarter. These local winds (Schroeder and Buck 1970; MacHattie 1968; Dirks and Martner 1982; Reifsnyder 1980) are a characteristic feature of fair, settled weather. The 0400-0600 winds at UCSL showed the

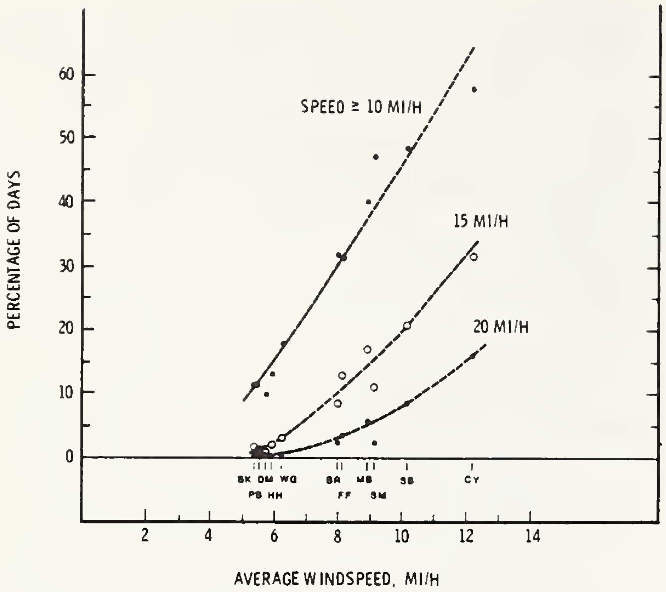


Figure 40.—Relationship between average windspeed and frequency of days with specified windspeeds, July-August afternoons. Curves fitted by eye. Based on various lengths and periods of record (generally between 10 to 20 years), with data mostly at 1600 m.s.t.; at 1300 beginning in 1974. Abbreviated station names appear along horizontal scale; most can be identified from figure 39. SB denotes Spotted Bear Mountain (south of Glacier Park).

drainage effect during July-August, with a prevailing direction from the northeast; winds from the southwest prevailed, by far, during October through April. On the east side of Waterton-Glacier, the downvalley direction is closely that of the prevailing large-scale wind, and thus summer nighttime winds tend to remain from the southwest.

Winds on some of the openly exposed ridges and mountaintop terrain may often increase during the evening and nighttime hours (Baughman 1981). Direct data are not available, however, to document such an effect in the Waterton-Glacier area. An average nighttime windspeed maximum was found at Gisborne Lookout, northern Idaho (Finklin 1983b). No such increase was evident

Table 10.—Monthly fire-weather averages during 1974-83 at 1300 m.s.t., compared with averages during 1951-70 at 1600 m.s.t. DB is dry bulb temperature (°F); RH, relative humidity (percent); WS, windspeed (mi/h). Freq <30 denotes percentage of days with RH less than 30 percent

		1974-83, 1300 m.s.t.[1]				Difference, 1974-83 minus 1951-70 (1600 m.s.t.)			
Station[2]	Month	DB	RH	WS	Freq <30	DB	RH	WS	Freq <30
Big Creek[3]	July	72.3	45.7	4.4	19	−5.9	+11.2	−1.8	
	Aug.	71.4	47.4	4.7	18	−5.1	+12.9	−1.7	
Hungry Horse[4]	June	66.2	47.9	3.8	18	−1.5	+4.1	−2.1	−7
	July	72.7	44.9	3.8	20	−5.9	+12.3	−2.4	−36
	Aug.	71.7	45.2	3.7	20	−4.9	+11.9	−2.0	−38
	Sept.	62.7	50.1	3.2	10	−2.8	+7.9	−1.2	−22
Polebridge	July	72.5	48.8	2.6	11	−5.4	+14.0	−2.9	−36
	Aug.	70.9	52.0	3.0	10	−5.3	+16.5	−2.5	−40
West Glacier[3]	July	73.6	47.1	5.7	11	−5.2	+10.6	−1.1	
	Aug.	72.6	47.6	5.7	15	−4.4	+11.1	−1.0	
Belly River	July	67.6	49.8	6.9	9	−2.5	+6.1	−2.0	−14
	Aug.	66.6	51.4	6.4	11	−1.9	+8.3	−2.3	−22
Saint Mary	July	68.8	44.7	8.5	25	−4.1	+6.7	−.2	−15
	Aug.	67.1	47.8	8.6	14	−4.2	+9.3	−.6	−28
Kalispell AP[5]	July	74.9 (76.8)	42.5 (39.3)	9.1		−4.0	+10.5		
	Aug.	74.0 (75.6)	42.4 (39.4)	9.1		−2.6	+9.4		

[1]Values in parentheses are corresponding averages at 1600.
[2]Ranger Stations except at Kalispell.
[3]1951-70 values estimated from 1964-73 data.
[4]Combined record at Coram R.S. (1951-57) and Hungry Horse (1958-70) used for 1951-70 data, except WS for 1958-70 only.
[5]Data for designated times interpolated from curves based on average values reported at 1100, 1400, and 1700; adjustment made for missing 1700 data during half of 1951-70 period.

at Desert Mountain Lookout, from 24-hour wind recording charts during July-August 1936-40 (on file at the Intermountain Fire Sciences Laboratory). At this somewhat sheltered site, the charts showed an average diurnal range from 4 mi/h (6 km/h) around 0800-1000 to 6.5 mi/h (10 km/h) around 1500-1700. At Mount Brown Lookout, 0800 or 0900 windspeeds, possibly near their diurnal minimum, averaged 7 to 8 mi/h (12 km/h)—down 2 mi/h from the afternoon average.

Prevailing nighttime wind directions on at least the higher, dominating mountaintops and ridges should generally differ little from those in the afternoon. The observed morning wind at Mount Brown, most often from the southwest, followed this pattern. A local effect was indicated at Desert Mountain, where the prevailing morning wind direction was from the east.

Local Site Effects on Windspeed.—The winds just described refer to those measured in open areas, though the station data may still show sheltering effects of adjacent trees (and terrain). Considerably less wind can be expected within an actual, dense timber stand. An indication of this is given by measurements at Priest River, ID (Gisborne 1941). There, the speed at 2-ft (0.6-m) and 49-ft (15-m) heights, under a timber canopy, averaged only 1 or 2 mi/h (2 or 3 km/h) on the windiest days. At the same time, winds above the treetops, measured on a tower, were near 15 mi/h (24 km/h).

Closer to Waterton-Glacier, data from the Upper Columbia Snow Laboratory (table 11) reveal some much lower average windspeeds than those previously quoted (for station 1A). Values for the other sites are from totalizing anemometers, usually read weekly. At listed stations 10 through 24, in small clearings, these instruments were situated close to a forest margin. Such locations, even on a ridgetop (station 20), may have average 24-hour speeds of just 2 or 3 mi/h (3 to 5 km/h) in summer and throughout the year. An average of 1 mi/h occurred at extremely sheltered station 12. In contrast, averages near 15 mi/h (24 km/h) were observed at an open, topographically well-exposed site—station 29. Airstream convergence through a narrow canyon area directly to the southwest may contribute to the greater wind here.

Table 11.—Average windspeeds observed at various sites at former Upper Columbia Snow Laboratory; stations described by Corps of Engineers (1952b).[1] Monthly 24-hour averages based mostly on 2 to 4 years, smoothed by 1-4-1 successive weighting, except as noted

Station	Elev.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Feet	*Windspeed, mi/h*											
1A[2]	4,960	7.7	7.7	7.3	6.9	6.3	5.9	5.8	5.9	6.6	7.2	7.5	7.6
10	6,340	3.0	3.0	2.6	2.6	2.3	2.1	2.1	1.8	2.2	2.4	2.9	2.9
12[3]	5,300	.6	.7	.7	.8	.7	.7	.7	.6	.6	.7	.6	.6
18	5,860	2.1	2.2	2.1	2.1	2.0	1.9	1.9	1.9	2.0	1.9	1.8	1.9
20	5,950	2.3	2.6	2.3	2.4	2.2	2.3	2.2	2.0	2.2	2.2	2.4	2.3
24	5,280	3.6	3.4	3.3	3.5	3.4	3.2	3.7	3.4	3.5	3.4	3.4	3.3
29[4,5]	6,075	16.9	7.9	14.4	19.2	12.8	16.7	15.3	11.4	14.9	no data		

[1]Except as noted, stations are in clearing or near margin of forest.
[2]Anemometer above tops of most adjacent trees, near headquarters.
[3]Treetops 40 ft or more above anemometer.
[4]Location on top of rounded grassy hill, highest elevation in Blacktail Hills.
[5]Based on 1 year, averages unsmoothed. January and August data for only 2 or 3 weeks.

Sunshine; Solar Radiation

November through January is normally the cloudiest time of year in the Waterton-Glacier area, July-August the clearest and sunniest. This tendency refers, at least, to clouds that block out sunshine. Statistics relating to average sky cover at adjacent airport stations (table 12), based on all types of clouds, indicate rather cloudy conditions continuing into spring. Observations at the cooperative climatic stations (same table), which show more clear days, apparently often excluded thin cloud cover.

The normal annual pattern of sunshine occurrence, or duration, may be approximated from figure 41. The values—in percentages of maximum possible duration—are not dependent on the length of daylight (sunrise to sunset), which at 49° N. varies from 8.2 hours in late December to 16.2 hours in late June. Sunshine duration over the park near and west of the Continental Divide should be closer to that shown at Kalispell. Noticeably greater autumn and winter sunshine occurs near the eastern edge, as at St. Mary (personal communication). Sunshine duration on the adjacent plains may approach that shown at Great Falls.

In general, the park terrain may normally receive between 20 and 35 percent of the maximum possible sunshine in December; 70 to 75 percent in July, with lowest summer amounts over high mountain areas and toward the north. Equivalent total sunshine duration is about 50 to 90 hours in December and 340 to 380 hours in July.

The above numbers apply to sunshine as detected by the standard electrical-type instruments used in the United States. These give higher values than the standard measurements of "bright" sunshine in Canada by a Campbell-Stokes (burnt-card) recorder. For example, monthly averages (Bryson and Hare 1974) for Lethbridge, AB, east of the Rockies, indicate generally 5 to 10 percentage units less duration than at similarly located

Table 12.—Monthly average cloudiness, sunrise to sunset, Glacier National Park vicinity and adjacent Montana stations. Average tenths sky cover and number of clear days (0-3 tenths cover) and cloudy days (8-10 tenths cover); observed during indicated periods of record

Station,[1] period		Tenths sky cover and numbers of days											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Kalispell	Clear	3	5	5	6	8	7	16	16	11	9	4	2
1921-48	Cloudy	22	17	16	13	11	11	3	5	11	15	20	24
Kalispell AP	Tenths	8.7	8.3	7.8	7.5	6.9	6.4	4.0	4.7	5.5	7.0	8.4	8.9
1950-82	Clear	2	2	3	4	5	7	15	13	11	6	2	2
	Cloudy	25	22	21	20	17	14	6	9	12	18	23	26
Great Falls AP	Tenths	7.3	7.5	7.4	7.4	7.0	6.6	4.2	4.8	5.6	6.4	7.1	7.3
1938-82	Clear	5	4	4	4	5	5	14	13	10	7	5	5
	Cloudy	20	18	18	18	17	14	6	8	11	15	18	19
Havre AP	Tenths	7.4	7.2	7.3	7.3	6.7	6.3	3.9	4.4	5.7	6.4	7.2	7.3
1961-70	Clear	5	5	5	5	6	6	16	14	10	8	5	5
	Cloudy	19	17	19	18	16	13	5	7	13	15	18	19
Babb 6NE	Clear	11	10	11	11	12	11	18	16	13	10	8	9
1921-48	Cloudy	8	8	8	7	8	9	3	5	7	8	8	10
Browning	Clear	13	14	14	13	13	12	19	15	14	14	11	12
1921-48	Cloudy	8	7	8	7	8	8	4	5	7	8	8	9
Summit	Clear	5	4	4	5	5	4	13	11	8	7	4	4
1935-48[2]	Cloudy	20	18	18	15	13	13	6	6	11	15	18	20
West Glacier	Clear	6	9	10	12	13	12	19	17	13	12	5	4
1921-48	Cloudy	19	15	14	11	11	9	4	5	10	14	19	22

[1]Data from first four stations are based on hourly or full-time observations; all types of clouds included. Data from last four stations are not strictly comparable; may not include thin, transparent cloudiness.
[2]Average numbers adjusted to period 1921-48.

Great Falls, MT (fig. 41). The differences are not logically related to observed cloudiness, which is also less at Lethbridge. Quite low average percentages of possible sunshine are shown closer to the Divide at Banff, AB (Janz and Storr 1977): 18 percent in December and 51 percent in July, attributed in part to topographic shading.

The annual pattern of incoming solar radiation (or insolation)—the solar energy received with sunshine and also through cloud cover—is portrayed in figure 42. The amounts shown refer to the insolation upon an unobstructed horizontal surface, as measured by an Eppley pyranometer. Amounts include the direct-beam radiation and the diffuse sky (or scattered) radiation (Reifsnyder and Lull 1965; Schroeder and Buck 1970).

Radiation values obtained close to Glacier Park at UCSL (above adjacent trees) correspond well with the trend from three surrounding stations based on longer records. The somewhat lower values at UCSL may be related to greater cloudiness; also, there is apparently a slight shading by mountain terrain, occurring early and late in the day. Otherwise, insolation should generally increase with elevation (Geiger 1965; Barry 1981); this can be expected under both clear and overcast conditions.

The daily values in figure 42 give average monthly radiation totals ranging from about 2,500 langleys (gm-cal/cm^2) in December to 19,000 langleys in July. The effect of cloudiness is evident in the relatively low June average. About 800 langleys may be received on perfectly clear, haze-free days in June and early July. The annual aggregate is about 120,000 langleys. For conver-

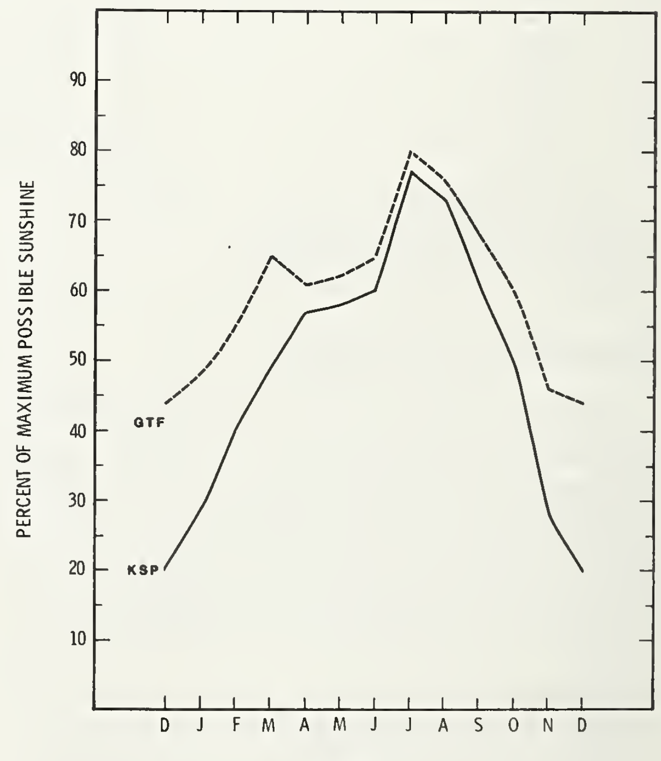


Figure 41.—Monthly average sunshine duration in percentage of maximum possible; measured by electrical-type recorders. At Kalispell, MT (KSP), based on 50 years prior to 1950; at Great Falls, MT (GTF), based on 40 years 1942-81.

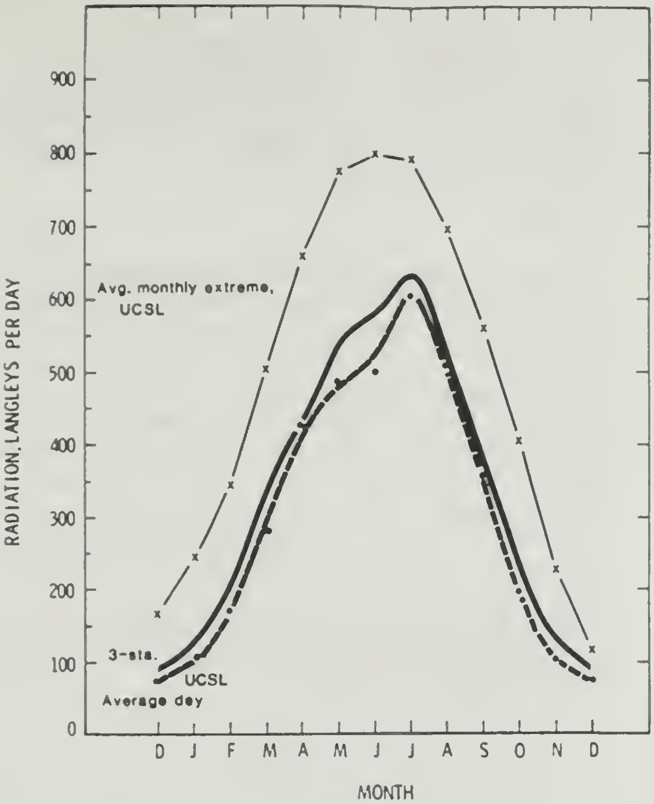


Figure 42.—Daily incoming solar radiation (direct and diffuse); annual regime. Langleys (gm-cal/cm²) received on a horizontal surface. Curves (and included data points) for Upper Columbia Snow Laboratory (UCSL) are based on 4-year period; three-station average based on 19 to 22 years at Great Falls, MT, Spokane, WA, and Suffield, AB.

sion to units of watthours/m², the numbers of langleys are multiplied by 0.0861.

On the actual mountain terrain, some large variations from the above amounts can be expected according to slope aspect and angle. The effects are greatest in winter. During December and January, a south-facing 30° (58 percent) slope may receive nearly twice as much total (direct and diffuse) radiation as a horizontal surface. A north-facing 30° slope may receive one-half the horizontal total and all of this will be diffuse radiation. These estimates incorporate direct radiation values presented by Buffo and others (1972). During July, the 30° south slope and horizontal surface should receive about the same total radiation; the north slope, perhaps 80 percent as much.

Evapotranspiration

Measurements from two standard evaporation pans adjacent to Glacier Park are summarized in table 13. The observed values integrate the effects of temperature, relative humidity, wind, and solar radiation. Also shown is the estimated potential evapotranspiration (PET) from soil and vegetation surfaces, derived by use of certain coefficients (Environmental Science Services Administration [ESSA] 1968). At both Hungry Horse Dam and Babb, on opposite sides of the park, the estimated PET is near 22 inches (560 mm) for the "warm season" (May-October) and 26 or 27 inches (about 675 mm) for the year. These amounts represent the combined evaporation and transpiration possible, given an adequate moisture supply at all times. Less PET can be expected on higher terrain as a result of the curtailing effect of lower temperatures and higher relative humidity. Because of the usual dry period during summer, the actual seasonal and annual evapotranspiration will be less than the potential.

Included in table 13 are PET totals calculated by the largely temperature-dependent Thornthwaite method (Thornthwaite and Mather 1957; Oliver 1973). These totals are lower than those just quoted and are apt to underestimate the true PET (Sellers 1965). The discrepancy is particularly large for annual totals, which are held down by the Thornthwaite method's assumption of no PET during months with mean temperatures of 32 °F (0 °C) or lower. Including three additional stations, Thornthwaite calculations give annual PET ranging from 15 inches (385 mm) at Summit to about 21.5 inches (545 mm) at Hungry Horse Dam and West Glacier.

Calculated annual "actual" evapotranspiration (AET), based on the Thornthwaite procedure, ranges from 14 inches (355 mm) at Summit and Polebridge to 18 inches (455 mm) at Hungry Horse Dam and West Glacier. (This is based on an adopted overall soil-moisture holding

Table 13.—Average (Avg.) monthly (warm-season) evaporation, inches, from "Class A" evaporation pans, observed during 1951-80. Also, estimated seasonal and annual potential evapotranspiration (PET), applying ratios or coefficients shown by ESSA (1968), and estimates (TAvg.) based on Thornthwaite method (see text)

Station		Pan evaporation								Est. PET	
		May	June	July	Aug.	Sept.	Oct.	May-Oct.		May-Oct.[1]	Year[2]
Babb 6NE	No. yrs	13	30	30	28	24					
	Average	5.95	6.20	7.16	5.97	4.19	—	31.47[3]	Avg.	22.66	26.98
	Std. dev.	0.92	1.06	1.00	.83	.77			TAvg.	18.45	19.14
Hungry Horse Dam	No. yrs	29	30	30	30	29	7				
	Average	4.93	5.72	7.88	6.71	3.33	1.43	30.00	Avg.	21.60	25.71
	Std. dev.	1.07	1.06	1.23	1.56	.72	.44		TAvg.	20.27	21.64

[1]Pan evaporation total multiplied by 0.72.
[2]May-October estimate divided by 0.84.
[3]Includes rough estimate of 2.00 inches for October.

capacity of 4 inches [100 mm] in the root zone.) True AET amounts may be about 2 or 3 inches greater.

Results from the Thornthwaite method are, nevertheless, used in figure 43 to portray the general changes in water balance during the year. The diagrams, plotted in conventional form, indicate the water surplus during much of the year at Summit (largely in snowpack storage and subsequent snowmelt). A normally slight deficit period, with AET less than PET, appears during summer. A larger deficit, covering a longer season, is indicated at Polebridge. In individual years, severity of this deficit—and, by implication, the fire danger—is seen to depend considerably on the vagaries of late spring and summertime precipitation.

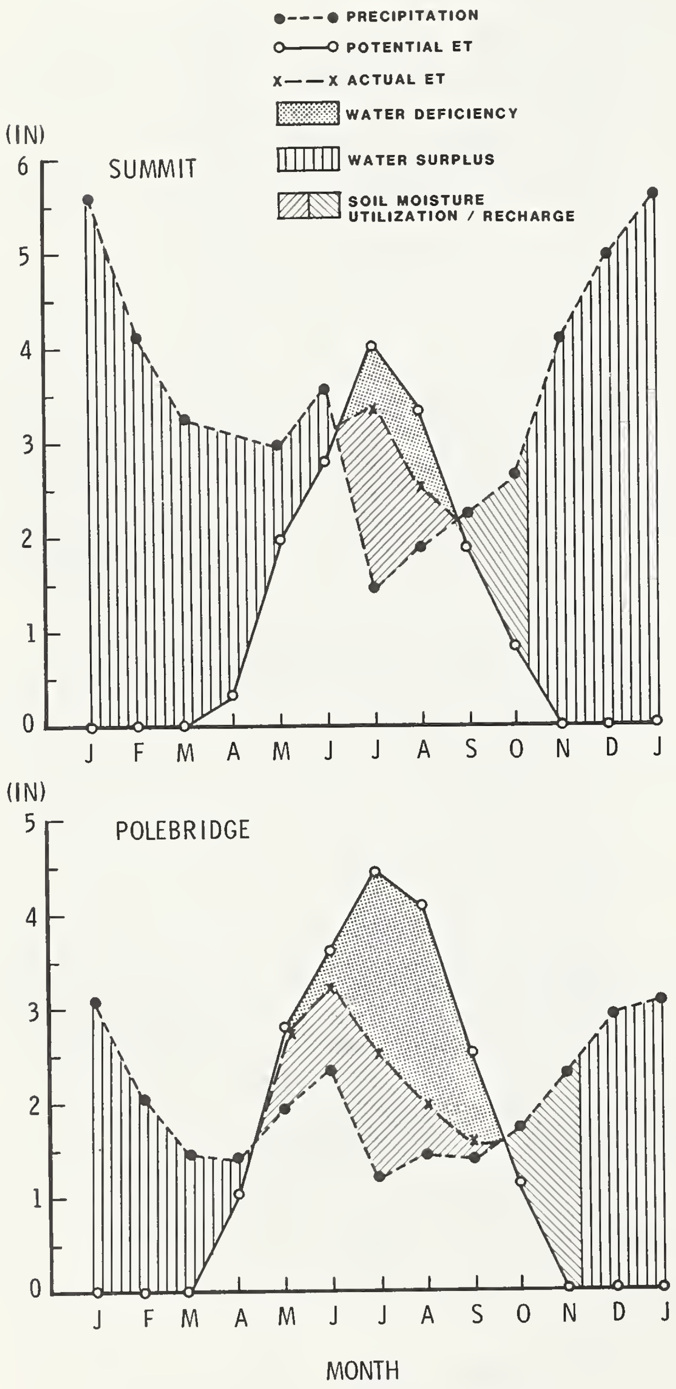


Figure 43.—Average water balance; schematic annual regime, based on the Thornthwaite method (see text) and 1951-80 monthly average temperature and precipitation.

Runoff

Figure 44 portrays the average annual (water-year) pattern of streamflow, as represented by the Middle Fork Flathead River—along the southwestern edge of Glacier Park. Over the period of a year and for the overall drainage area, this streamflow, or runoff, should equal the precipitation minus evapotranspiration. Plotted in the same figure is a three-station index of the precipitation, utilizing stations near the upper and lower ends of the drainage. The runoff shows considerable lag until its strong peak, from melting snowpack and springtime precipitation, in May and June. These 2 months normally account for 59 percent of the yearly total runoff. A return to near base flow occurs in August, with a continuing decline to lowest levels in winter—when monthly runoff is 2 percent of total.

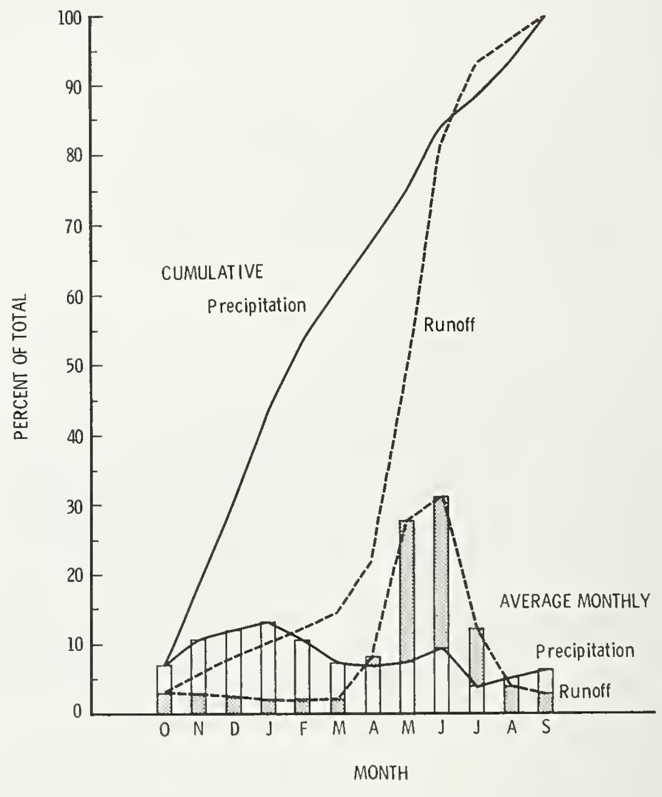


Figure 44.—Comparison of average water-year regimes of precipitation and runoff, southwestern portion of Glacier Park. Precipitation is three-station average from West Glacier, Essex, and Summit, based on or adjusted to 1951-80; runoff, that of Middle Fork Flathead River near West Glacier. Values, in percentage of yearly total, are adjusted to 30-day months.

Table 14.—Monthly average runoff from drainages in Waterton-Glacier area, in percentage of annual total (see fig. 45); unregulated and undiverted streams. Based on 28 to 30 years during 1951-80 except as noted

Drainage, area (mi²), gauging point	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
	Percent											
Middle Fork Flathead River, 1,128, near West Glacier	3.1	2.8	2.5	2.0	1.9	2.2	7.8	28.1	30.6	12.1	4.1	2.8
Waterton River, 238, near Waterton Park	3.9	3.0	2.3	1.8	1.5	1.6	4.2	22.2	34.6	16.3	5.1	3.6
Swiftcurrent Creek,[1] 31.4, at Many Glacier	5.3	3.4	2.0	1.6	1.3	1.5	4.6	21.7	29.5	16.4	7.2	5.4
Grinnell Creek,[2] 3.47, near Many Glacier	5.0	2.5	1.2	1.0	.7	.8	2.9	15.5	28.4	22.2	12.7	7.2

[1]22 to 30 years of monthly data.
[2]26 to 28 years of monthly data.

The Middle Fork Flathead's yearly runoff has a moderately high correlation with a simple index of annual precipitation, based on only two stations (Summit and West Glacier). For the 41 water years 1940-80, r was 0.87. Carryover of runoff from the preceding year is apparently small, as indicated by a near-zero correlation between successive yearly totals; r was 0.05.

The average runoff regime is generally similar in the other drainages, normally peaking during June; examples, table 14. (See figure 45 for drainage locations.) Data for Grinnell Creek show the relatively greater summertime runoff proportion in an upper subdrainage area; this particular area includes Grinnell Glacier. Late summer icemelt and localized heavy showers may be contributing factors here (Johnson 1980).

Annual runoff volumes for Waterton-Glacier drainages are shown in figure 45. The numbers of acre-feet are, of course, largely dependent on drainage size. An average of more than 2,200,000 acre-feet (272 000 ha-m) is produced in the Middle Fork Flathead drainage (which includes land outside the park); less than 500,000 acre-feet (61 000 ha-m) in the much smaller Waterton River drainage. The areally averaged depth equivalents of the runoff (calculated as: volume/drainage area) better reflect the relative amounts of area-average precipitation. For example, the 30-year average runoff depth over the Middle Fork Flathead, 37 inches (935 mm), indicates about 54 inches (1 370 mm) precipitation—assuming an average of 17 inches (432 mm) evapotranspiration. The corresponding runoff depth is even larger, 39 inches (990 mm), over both the Waterton River and St. Mary River drainages. This confirms earlier indications (fig. 9) that precipitation within Glacier Park can be as substantial east of the Continental Divide as on the west side. Precipitation amounts do, of course, tend to decrease toward both the eastern and western edges of the park.

Extremely high runoff depths are indicated in some subdrainage areas close to the Divide, upward to 100 inches (2 540 mm) over the 3.47-mi² (9.0-km²) Grinnell Creek drainage area. This amount corresponds with the Grinnell Glacier storage-gauge measurements of precipitation (some of which may be snow blown into the

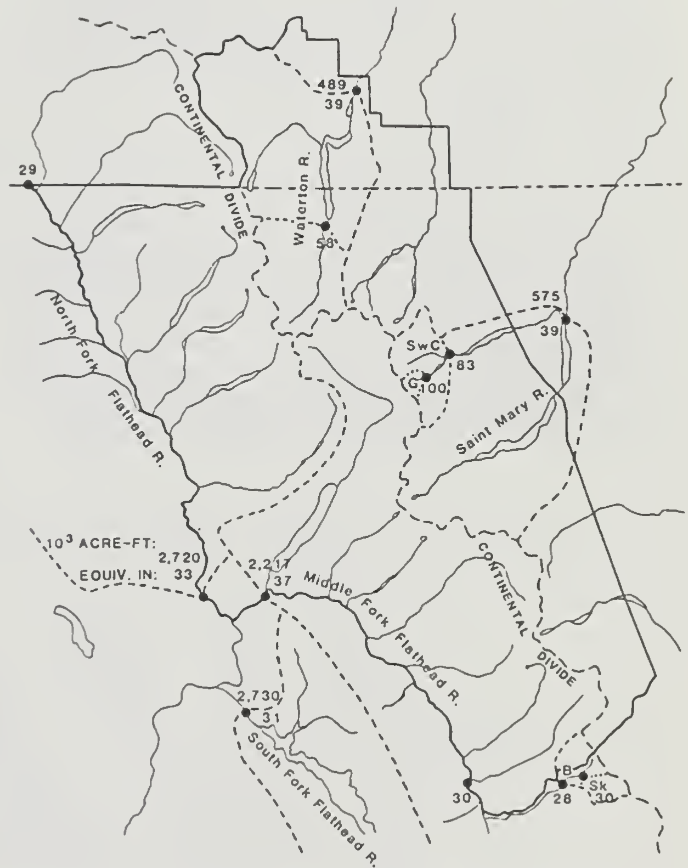


Figure 45.—Average yearly runoff, Waterton-Glacier Park area; based on or adjusted to period 1951-80. Values are given in thousands of acre-feet (top number) and equivalent areally averaged depth, inches (bottom or only number), for drainage area (outlined) above gauging point; values included for indicated subdrainages. G denotes Grinnell Creek; SwC, Swiftcurrent Creek (includes area of G); Sk, Skyland Creek; B, Bear Creek (includes area of Sk).

glacial cirque). Relatively low runoff depths shown for subdrainages comprising the UCSL study area, just west of the Divide, bear out the modest elevational increase in that area's observed precipitation (fig. 9).

Interdrainage correlation of annual runoff is found to be high, suggesting a high areal correlation of precipitation. For example, based on about 30 years, r was 0.90 between the Middle Fork Flathead River and the Waterton River; 0.91 between the Middle Fork Flathead and the St. Mary River; 0.97 between the St. Mary and the Waterton.

Highest streamflows on record, and probably during this century, are generally those associated with the June 7-8, 1964, storm and flooding ("Climatological Data," National summary for June 1964). A momentary peak flow of about 140,000 ft^3/sec (3 967 m^3/sec) occurred on the Middle Fork Flathead River near West Glacier—6.5 times the average peak for other years during 1951-70, including the previous record (since 1939) of 34,500 ft^3/sec (978 m^3/sec) in 1954. The Waterton River, near Waterton Park, reached 25,700 ft^3/sec (728 m^3/sec) and the St. Mary River, near Babb, 16,500 ft^3/sec (468 m^3/sec). These peaks exceeded levels recorded in 1908 and 1902, respectively.

Weather Correlations Between Locations

As noted in previous sections, there is a general similarity across Glacier Park in the normal monthly trends (if not numerical values) of temperature, relative humidity, and precipitation. Perhaps of equal interest is the areal similarity, or correlation, in weather variations during individual years, on various time scales as small as 1 day. Such knowledge can be useful toward inferences between or beyond existing weather station locations; also toward estimates for missing station data.

Some correlation results are shown in figures 46 through 49, using West Glacier as the reference station in all but the last figure. In this, for the needed length of fire-weather record, Polebridge R.S. serves as the reference.

Figures 46 and 47 reveal a generally high areal correlation of afternoon or maximum temperatures. For all of the indicated time frames, correlation coefficients of 0.90 to 0.95 or better were obtained between west-side locations (and, not shown, also between east-side locations); values were nearly as high across opposite sides of the Continental Divide. Because of local or inversion-related effects—varying with cloudiness and wind—correlations of minimum temperatures are generally lower, particularly in summer. For example, between West Glacier and Polebridge, r was 0.72 for July-August monthly average minimums, compared with 0.91 for maximums. The December-February minimums, however, had a correlation of 0.97, the same as for maximums. The correlations of summer afternoon relative humidity (fig. 47) are somewhat lower than those for temperature; some of this decline may result from humidity measurement errors.

Figure 48 indicates a moderately high correlation of monthly precipitation amounts between west-side locations, as does figure 49 for summertime 10-day amounts; r was near or greater than 0.80. A similar correlation was obtained for the 10-day amounts on the east side, between Belly River and both St. Mary and East Glacier. The precipitation correlations between the west and east edges, however, are only about 0.50 to 0.60. Lower correlations occur on the 1-day (24-hour) time scale, but r was still near 0.80 between West Glacier and both Desert Mountain and Mount Brown.

Figure 46.—Correlations of monthly average daily maximum temperatures, between West Glacier and other stations; based on 1949-80 data. Plotted numbers are averages of individual monthly correlation coefficients (r) grouped by indicated seasons.

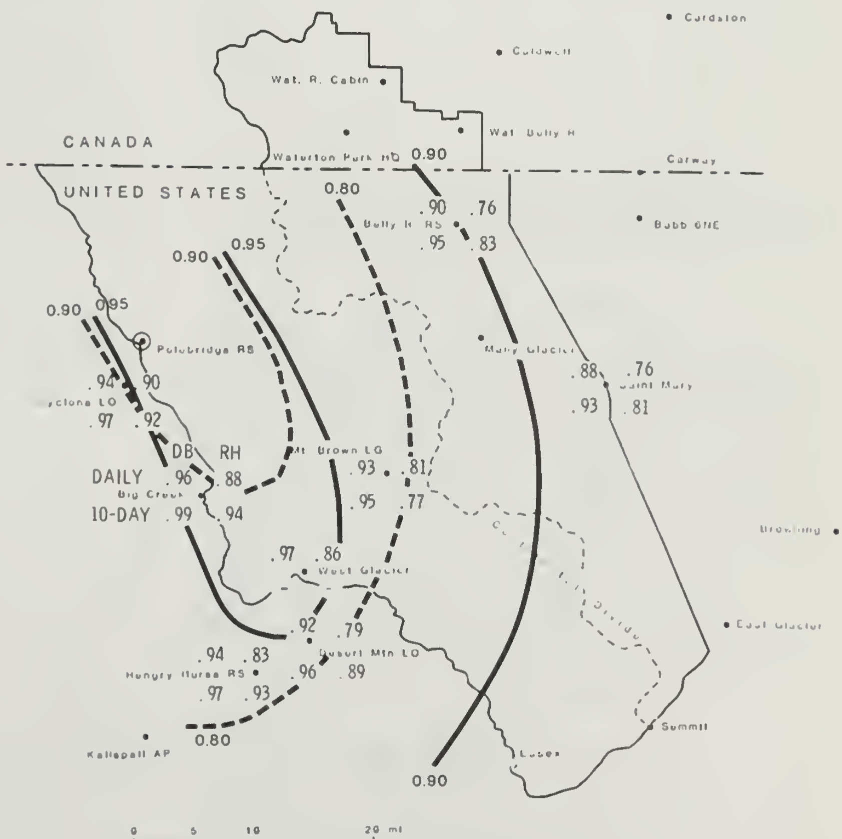


Figure 47.—Correlations of summer afternoon dry bulb temperature (DB) and relative humidity (RH), daily and 10-day average, between Polebridge Ranger Station and other stations; at 1600 m.s.t., July and August combined. Plotted daily coefficients are based on available 1950-72 data, sampled at 5-day intervals; 10-day based on 1946-72. Isolines are drawn for daily values of r; solid line for DB and dashed line for RH.

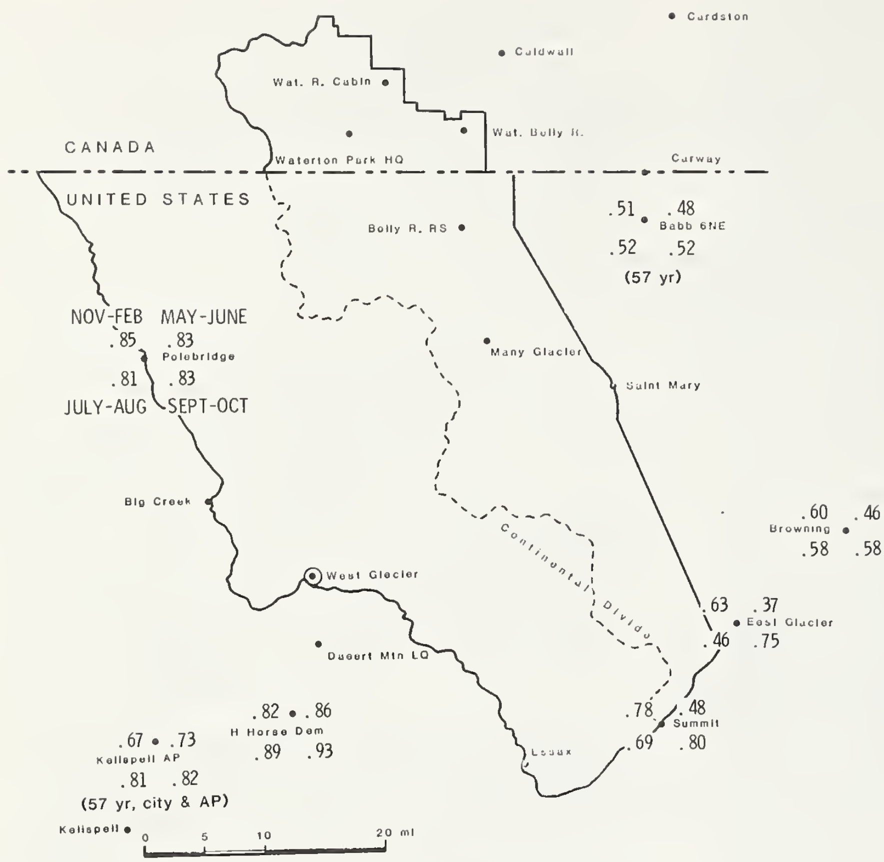


Figure 48.—Correlations of monthly precipitation totals between West Glacier and other stations; based on 32 to 37 years (through 1982) except as noted. Plotted numbers are averages of individual monthly correlation coefficients (r) grouped by indicated seasons.

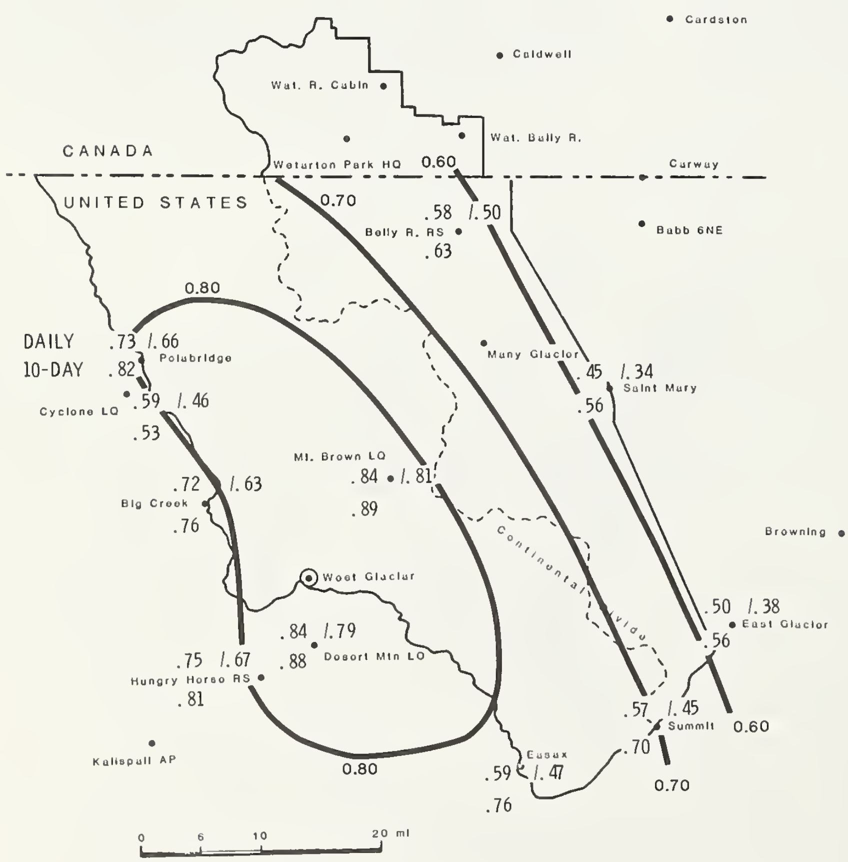


Figure 49.—Correlations of summertime precipitation, daily and 10-day, between West Glacier and other stations; based on available July and August 1946-72 data. Indicated daily coefficient (r) at left of slash is based on all days of record; value at right, on days with at least 0.01 inch at either station. Isolines are drawn for 10-day values of r.

Persistence of Weather

A tendency for persistence of the overall weather pattern from one month, season, or year to another could aid in fire management and other planning. Such persistence is examined here for temperature and precipitation, in terms of correlations—for a general indication—and frequencies or probabilities applicable to prediction. As with more elaborate methods of long-range forecasting, monthly or seasonal predictions based on persistence give only the gross outcomes relative to normal; important variations on smaller time scales may be obscured.

For temperature, specifically the average daily maximum, correlations were statistically significant between spring (May-June) and summer (July-August) averages, mostly at the 1 percent level (Freese 1967; Snedecor 1956). The correlation coefficients, obtained at six stations and based on 27 to 32 years (1949-80), ranged from 0.36 to 0.51. (Daily maximum, rather than the 24-hour mean temperature, was chosen as better relating to the clear, dry—or cloudy, moist—character of the 2-month periods.) Temperature correlations between the individual months and also between other pairs of seasons were poorer. For example, at West Glacier during 1931-83, r was −0.03 between the May and June average maximums, 0.04 between June and July, and 0.17 between July and August—compared with 0.45 between May-June and July-August.

The spring and summer temperatures are compared further, by class frequencies, in table 15 (example for West Glacier). In the 53-year (1931-83) data sample, a defined warmer than normal May-June was followed by a warmer than normal July-August in 53 percent of the (15) cases, a cool July-August in 13 percent. Nearly the converse tendency is shown following a cooler than normal May-June. A chi-square test (Freese 1967; Snedecor 1956) does barely indicate, by conventional standards, a statistically significant persistence in table 15 (P, 0.05).

Table 16, for precipitation at West Glacier, suggests a persistence tendency following both a wetter than normal and a drier than normal May-June. In the 52-year sample, there was a twofold or threefold frequency of an identical July-August precipitation class as compared with an opposite class. Nevertheless, a chi-square test gives no statistical significance here (P was about 0.25).

Correlations between the actual amounts of May-June and July-August precipitation, at seven stations, were all very low (r ranged from −0.08 to 0.19). They were similarly low between other seasonal totals, between successive monthly totals (from May to October), and between annual totals.

Table 15.—Frequency of specified maximum-temperature classes[1] in summer (July-August) following those in spring (May-June); at West Glacier, MT, based on 53 years 1931-83. For each combination of May-June and July-August classes, listed top number is the actual number of cases; bottom number is the percentage of all cases in the corresponding row

May-June max. temp. class	July-August max. temp. class: Below normal	Near normal	Above normal	Total cases	Chi-square test value
	Number of cases				
Below normal	8	6	1	15	
	Percent of total in row				
	53	40	7		
Near normal	8	9	6	23	
	35	39	26		
Above normal	2	5	8	15	
	13	33	53		
Total cases	18	20	15	53	[2]9.49

[1]Criteria are based on standard deviation (SD) about the 53-year average maximum value; SD was taken as 2.6 °F (average of 2.3 °F observed for May-June and 2.8 °F for July-August). "Above normal" class is defined as temperature > +0.5 SD (1.3 °F) from average; "near normal," within ±0.5 SD of average; "below normal," < −0.5 SD from average.
[2]Statistically significant, P = 0.05.

Table 16.—Frequency of specified precipitation classes[1] in summer (July-August) following those in spring (May-June); at West Glacier, MT, based on 52 years 1931-82. Numbers listed as in table 15

May-June precip. class	July-August precipitation class: Below normal	Near normal	Above normal	Total cases	Chi-square test value
	Number of cases				
Below normal	6	7	2	15	
	Percent of total in row				
	40	47	13		
Near normal	5	4	9	18	
	28	22	50		
Above normal	4	7	8	19	
	21	37	42		
Total cases	15	18	19	52	[2]5.77

[1]Criteria are based on percentage of 52-year average 2-month precipitation totals and also consider the median totals and variability. Defined "near normal" limits are 85-110 percent for May-June; 75-120 percent for July-August.
[2]Not statistically significant, P about 0.25.

Climatic Trends

The various averages and frequencies that have been presented apply to a basically stable climatic state. These statistics integrate the variations or differences in weather that can be expected between individual years or series of years. A sequence of years with abnormal conditions may, nevertheless, lead to impressions of a climatic cycle, if not a changing climate. Whatever their regularity or significance, such cycles are found to be fluctuations superimposed upon longer cycles or trends—on the scale of hundreds or thousands of years and including ice ages (Oliver 1973; Critchfield 1974; Hare and Thomas 1974; National Research Council 1975).

Figures 50 and 51 chart the climatic trends or fluctuations of observed precipitation and temperature, respectively, in or near Glacier Park; data are limited to this century. The graphs employ two forms of smoothing—by 11-year running means and 5-year weighted means, both representing overlapping sequences of years. The first

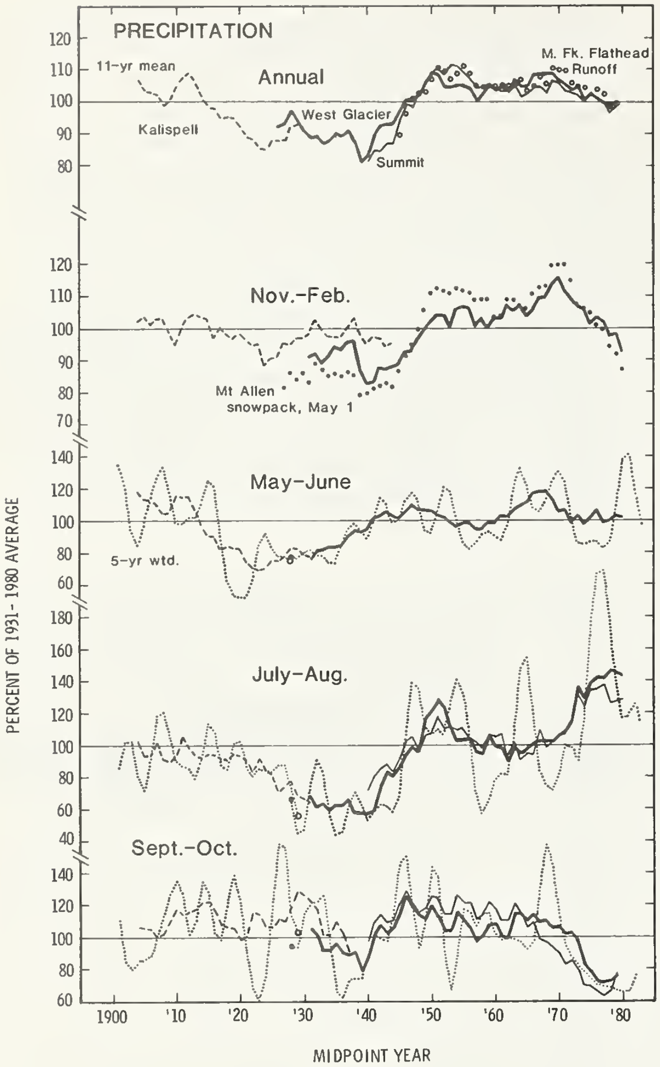


Figure 50.—Trends or fluctuations of annual and seasonal precipitation (or precipitation indexes) during this century; Glacier Park area, near or west of Continental Divide. Based on data through August 1985. Shown by 11-year and 5-year (weighted) running means (see text), plotted at midpoint years, in percentage of observed or estimated 1931-80 average. Small open circles near 1930 denote ending of plotted 5-year graph based on Kalispell; filled circles, beginning of West Glacier segment—some overlap is included for comparison.

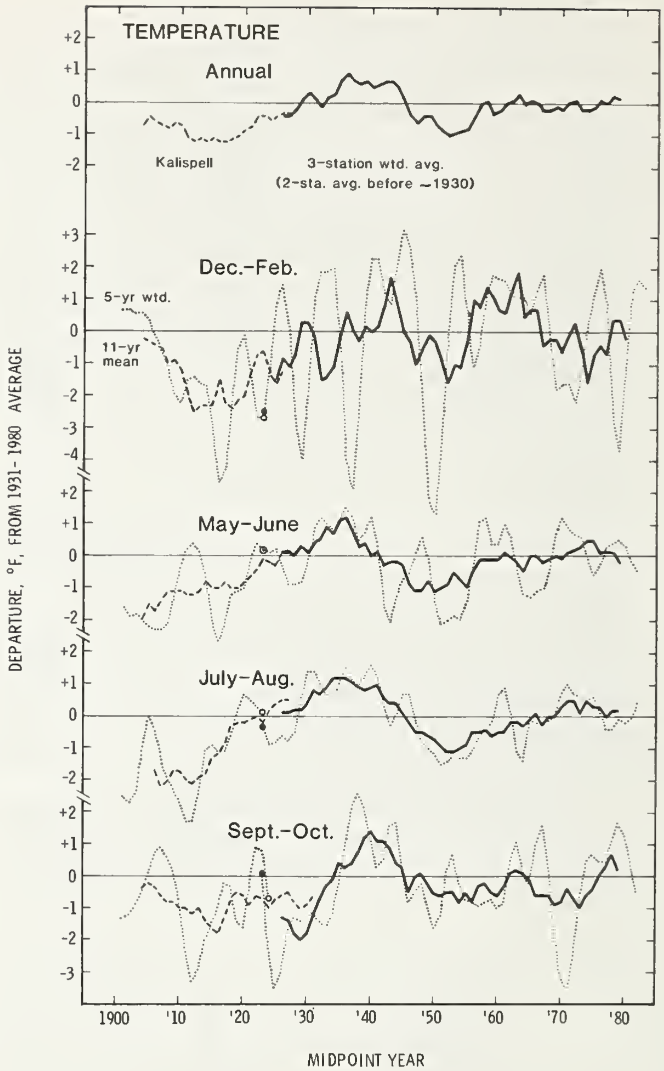


Figure 51.—Trends or fluctuations of annual and seasonal mean temperatures (averages of daily maximum and minimum); Glacier Park area, west and east of Continental Divide. Based on data through February 1985. Shown as in figure 50, except plotted values are degree departures from calculated 1931-80 average. "Three-station" average is based on Kalispell, West Glacier, and Babb 6NE (given two weights); Kalispell data are from airport station after 1950 (1931-80 baseline was adjusted accordingly).

form gives equal weighting to each year's data; use of 11 years, rather than 10, allows easier placement of a midpoint. The second form, portraying short-term fluctuations, applies successive weighting of 1, 4, 6, 4, and 1; this "binomial" filter is described further by Panofsky and Brier (1963). Resulting values are plotted relative to the recent 50-year, 1931-80 average.

PRECIPITATION

The broader features of figure 50 include the well-known dry period centered in the 1920's and 1930's. Eleven-year mean annual precipitation at West Glacier was as low as 81 percent of the 1931-80 average; July-August, 58 percent. The annual means show little overall change following a recovery by 1950, to as high as 109 percent, but the recent trend has been generally downward.

The seasonal graphs display some opposing tendencies since the recovery around 1950. Notable is the increase in July-August precipitation during the 1970's. The 11-year and 5-year (weighted) means, reaching about 140 percent and 200 percent of average, respectively, were evidently at their highest levels of the century. This characteristic was likewise found at Priest River, ID (Finklin 1983b). In contrast, September-October precipitation has been exceptionally low in recent years, prior to much higher amounts in 1984 and 1985 (table 20, appendix). November-February amounts, contributing a large portion of the annual precipitation, also show a recent decline—following a strong peak centered around 1970.

TEMPERATURE

The annual and seasonal graphs in figure 51 again display some opposing fluctuations, but they share in an overall warming trend during the 1910's and 1920's and the subsequent peak values in the 1930's or early 1940's—coinciding with the low precipitation. They show subsequent cooling until around 1950 to 1955. During this course the 11-year annual means, based on a three-station index, reached 0.9 °F (0.5 °C) above, and then 1.0 °F (0.6 °C) below, the 1931-80 average. These means were up to the long-term average value by the late 1950's and since then have fluctuated very little.

The late spring and summer temperatures show a continued, overall rise since the 1950-55 values, though a slight downward fluctuation to near average has occurred recently. Wide fluctuations characterize the winter graphs. Since about 1910, latest 11-year means indicate a net warming of 2 °F in both winter and summer and 1 °F for the year.

This warming follows the overall global and northern hemispheric trends (above references and National Research Council 1983), though many of the details differ. Some of the fluctuations are out of phase with those in eastern parts of the United States and Canada (Diaz and Quayle 1980; Hare and Thomas 1974). This difference appears related to the prevailing upper-air trough and ridge positions—their east-west spacing and shifts in location. The fluctuations also show some differences with those averaged over the entire northern and central Rocky Mountain area (Bradley 1980); the use of differently defined seasons may be a contributing factor.

Authorities disagree as to the role of the much-publicized carbon dioxide (CO_2) "greenhouse effect" in this century's warming to date (National Research Council [NRC] 1983; Yulsman 1984), though the consensus expects a more definite effect in the future. A conservative projection by the NRC calls for an additional global average warming of about 3 °C (5 °F)—from a doubling of atmospheric CO_2 due to fossil fuel burning—by the year 2075, with greater warming at high latitudes. The Environmental Protection Agency (EPA) predicts such a change by 2050. Should this change occur, the higher average temperatures impacting Waterton-Glacier would apparently exceed those during the postglacial warm period around 5,000 to 7,000 years ago (National Research Council 1975).

SUMMARY

As shown by the various data, the Glacier Park area has climatic characteristics generally identified with mountainous terrain; these are superimposed upon the broader climate associated with geographic location. Some large differences in precipitation amounts and average temperatures are found within the 1,583-mi² (4 100-km²) park area, but the normal annual regimes of these and other climatic elements are generally similar or parallel. An exception occurs with respect to wind.

Thus, though normal annual precipitation may range from 23 inches (585 mm) to 100 inches (2 500 mm) or more, winter (particularly November-January) is the wettest, or snowiest, time of year over most of the park. Likewise, this area generally has a secondary precipitation peak in late spring (May-June) and a minimum in summer (July-August). The pattern changes—with much less winter precipitation—on the plains immediately east and in the main Flathead Valley to the west of Glacier Park. Average windspeeds, in contrast, show rather diverse annual regimes—with topography and location east or west of the Continental Divide dominant factors. Winter is the windiest time of year east of the Divide and on exposed mountain terrain, in line with the free-air wind conditions. Average speeds are then near a minimum in western valley locations.

Though large contrasts can occur across the Continental Divide on individual days, afternoon (or maximum) temperatures during summer and the other seasons show a strong areal correlation (between stations, the coefficient r was commonly 0.90 to 0.95). This applies to daily as well as monthly-average maximum temperatures. The correlation of afternoon relative humidity (observed during summer) is somewhat lower though still high. Correlation of precipitation amounts, on daily to monthly time scales, is moderately high ($r \sim 0.75$ to 0.85) within distances of about 25 mi (40 km).

In an examination of weather persistence, based on 53 years at West Glacier, a statistically significant relationship was indicated between average maximum temperatures during late spring and the ensuing summer. Predictive ability, however, involves only the gross 2-month outcomes relative to normal. As an example, a defined warmer than normal May-June was followed by a warmer than normal July-August in 53 percent of the

(15) cases; a cool July-August, in 13 percent; near normal July-August, in 33 percent. Practically no persistence or correlation was found between the successive individual monthly temperature values—between those in May and June, June and July, or July and August. A persistence tendency between May-June and July-August precipitation was not statistically significant.

Climatic trends or fluctuations during this century were examined by use of 11-year and 5-year (weighted) running means. Summer (July-August) temperatures show an overall warming of 2 °F since the 1910's, though the highest sustained averages to date were centered in the dry 1930's. A notable increase in July-August precipitation has occurred since 1974, followed by a most recent decline. In contrast, autumn (September-October) was exceptionally dry during recent years (but rather wet in 1984 and 1985). At fire-weather stations, July-August afternoon relative humidity observed during 1974-83 averaged about 10 percent higher than for 1951-70. This appears to reflect a more moist, unrepresentative summertime regime, but up to one-half of the difference may be attributed to a change in observation time initiated in 1974—from 1600 to 1300 m.s.t. The present observation time does not as well represent the afternoon extreme conditions in this area.

Various tables and graphs are presented as an aid in fire management planning; these summarize data for valley and 6,000-ft (1 830-m) locations. An important feature of the Glacier Park area is the much greater occurrence of wildfire west of the Divide—where about 90 percent of the reported natural (lightning-caused) fires have burned. (There is a slight bias, as the west side contains 60 percent of the park's land area.) Climatic findings in this report do not support some published explanations for the difference in fire—and for the basic difference in vegetation (and fuel loading and continuity); these differences are sometimes attributed to less precipitation and lightning activity on the east side. The lesser timber here may indicate less available moisture, but our data suggest that precipitation and its monthly distribution are generally similar to that on the west side. Instead, wintertime dessication may have a significant effect on the east-side conifers; this is a result of chinook winds and related large, rapid temperature changes (Arno and Hammerly 1984).

In addition, examination of a Glacier Park topographic map, with superimposed green color, suggests that the rugged, rocky terrain greatly limits the extent and continuity of forests east of the Divide. Potential prairie-type fuels, near the eastern edge, are heavily grazed by wildlife.

Nevertheless, more fire starts might be expected on the east side than actually occur—even if these fires remain small. Our data indicate that lightning activity is as frequent here as on the west side. More of the east-side lightning discharges, however, between cloud and ground, may be favored on higher, largely barren terrain. Fuel moisture during the summer would certainly be a suspected ignition factor, though a more definitive explanation requires further study. Peterson (1971) examined the lightning-fire contrast over a broader area—between the eastern and western fire-weather zones of the Forest Service Northern Region. He noted the difference in how light, flashy fuels and heavy fuels respond to the increased relative humidity and the rainfall accompanying summer thunderstorms. In such a case the generally lighter, faster responding fuels on the east side of Glacier might not ignite easily.

Though this report has presented many climatic details, there are inevitably large gaps in the data coverage—in dimensions of both space and time. To some extent, inferences can be made from the high correlations between stations and from the general relationships shown with topography, particularly elevation. For more site-specific data needs, the available averages can serve as a starting point from which local differences may be determined by field observations. The local effects should be at a maximum during fair, quiet weather situations. Additional stations would certainly be welcome, though there would never be enough to reveal all that a manager or researcher might wish to know. One recommended location for an additional fire-weather station is in the far southern portion of Glacier Park—in the Middle Fork Flathead River drainage. A promising future source of data, on an hourly basis, is the Remote Automatic Weather Station (RAWS) now employed by other Federal agencies in the Northern Rockies.

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Table 17.--Differences in monthly average temperatures, °F, due to observation days ending at differing times, 5 p.m. and 12 midnight, m.s.t., at two stations in Glacier Park-western Montana area. Based on hygrothermograph readings at Upper Columbia Snow Laboratory (UCSL), 1947-50, and near Missoula, 1967-72

Station		5 p.m.-5 p.m. average minus midnight-midnight average[1]												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
		°F												
UCSL Hqtrs.	Max.	+0.7	+0.8	+1.2	+1.4	+1.6	+1.6	+1.6	+2.0	+2.0	+1.0	+0.4	+0.4	+1.2
(Sta. 1B)	Min.	+1.6	+1.3	+1.5	+1.2	+ .8	+ .7	+ .6	+ .9	+1.2	+1.0	+1.1	+1.5	+1.1
	Mean	+1.2	+1.1	+1.4	+1.3	+1.2	+1.2	+1.1	+1.5	+1.6	+1.0	+ .8	+1.0	+1.2
Missoula 2NE	Max.	+ .6	+ .9	+1.2	+1.6	+1.8	+1.9	+1.7	+1.7	+1.8	+1.1	+ .7	+ .6	+1.3
	Min.	+1.0	+ .8	+ .8	+ .9	+ .6	+ .7	+ .6	+ .6	+ .9	+1.0	+1.1	+1.1	+ .8
	Mean	+ .8	+ .9	+1.0	+1.3	+1.2	+1.3	+1.2	+1.2	+1.4	+1.1	+ .9	+ .9	+1.1

[1] Original average differences smoothed by 1-4-1 weighting applied to successive monthly values.

Table 18.--Climatological summaries for West Glacier, Polebridge, and Summit, MT; based on 24-hour periods ending at indicated observation times (m.s.t.). Averages based on 1951-80 for temperature and 1941-80 for precipitation and snowfall, except as noted. Average number of days, 1949-78. Extremes for 1931-1985, except as noted. T denotes trace, and amount too small to measure; + denotes occurrence also in earlier years; * denotes less than one-half

West Glacier - Lat. 48° 30', Long. 113° 59'; Elevation 3,180 ft (corrected). Observation time 5 p.m.

Summary information	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
TEMPERATURE, °F													
Averages:													
Daily maximum	27.6	34.8	41.0	52.1	63.7	70.9	79.6	77.6	66.4	52.9	37.5	30.8	52.9
Daily minimum	13.4	18.9	21.6	29.1	36.5	43.2	46.6	45.8	38.8	31.7	24.4	19.0	30.7
Monthly	20.5	26.9	31.3	40.6	50.1	57.1	63.1	61.7	52.6	42.3	31.0	25.0	41.8
Extremes:													
Highest	52	58	64	80	91	92	101	99	94	79	67	54	101
Year	1931	1950	1941	1939	1936	1941+	1934	1969	1967	1942	1948	1941	1934
Lowest	-37	-40	-30	-8	13	24	31	31	16	-9	-29	-36	-40
Year	1937	1933	1960	1936+	1954	1959	1979	1937	1934	1936	1959	1968	1933
PRECIPITATION TOTAL, INCHES													
Average	3.35	2.47	1.78	1.81	2.55	3.28	1.56	1.73	2.11	2.43	3.05	3.40	29.52
Highest monthly	7.07	5.87	4.43	4.50	4.94	6.83	4.70	5.14	6.17	5.96	7.52	7.72	7.72
Year	1953	1940	1932	1948	1968	1981	1983	1954	1968	1933	1959	1980	1980 Dec.
Lowest monthly	.16	.21	.47	.27	.76	.75	.00	.00	.35	.08	.27	.81	.00
Year	1985	1934	1965	1952	1947	1977	1960	1955	1957	1952	1936	1985	1960+ July
Highest daily	1.43	2.09	.95	1.41	1.64	3.47	1.68	2.08	1.59	1.76	1.50	2.38	3.47
Year	1971	1951	1947	1974	1980	1964	1964	1947	1952	1955	1932	1964	1964 June
Snowfall													
Average	40.0	24.3	15.8	4.0	.6	.3	.00	.00	.2	2.0	17.5	34.2	138.9
Highest monthly	93.0	57.5	50.4	24.0	5.0	8.0	.00	.00	3.5	28.0	58.3	95.0	95.0 Dec.
Year	1972	1937	1964	1948	1964+	1966			1972	1951	1959	1971	1971
Highest daily	19.0	16.0	15.0	8.5	5.0	8.0	.00	.00	3.0	12.0	12.0	20.0	20.0
Year	1972+	1957	1954	1953	1951	1966			1965	1951	1959+	1938	1938 Dec.
AVERAGE NUMBER OF DAYS													
Precipitation ≥0.10 inch	11	7	7	6	7	7	4	5	6	7	9	11	87
Snowfall ≥1.0 inch	13	8	6	1	*	*	0	0	*	1	4	12	44
Temperature, °F													
Max. >90	0	0	0	0	0	*	2	2	*	0	0	0	4
Max. ≤32	18	8	4	*	0	0	0	0	0	*	7	16	53
Min. ≤32	30	27	29	22	9	1	*	*	6	18	26	30	198
Min. ≤0	6	2	1	0	0	0	0	0	0	0	1	2	12

(con.)

Table 18. (Con.)

Polebridge - Lat. 48° 46', Long. 114° 16'; Elevation 3,520 ft. Observation time 5 p.m.; 7 a.m. beginning April 1975

Summary information	Month												Year
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
TEMPERATURE, °F[1]													
Averages:													
Daily maximum	27.4	36.2	41.7	52.3	63.5	71.1	80.2	78.8	68.7	54.8	37.9	30.4	53.6
Daily minimum	6.8	12.7	16.2	25.2	32.1	38.5	40.8	39.1	33.0	25.9	18.9	12.3	25.1
Monthly	17.1	24.5	29.0	38.8	47.8	54.8	60.5	59.0	50.9	40.4	28.4	21.4	39.4
Extremes:													
Highest	51	58	65	86	92	96	101	102	99	85	65	53	102
Year	1962	1963	1978	1936	1936	1937	1934	1969	1967	1955	1981	1980	1969
Lowest	-46	-45	-38	-12	-5	21	25	25	5	-21	-38	-43	-46
Year	1957	1936	1960	1936	1954	1951	1979	1937	1934	1936	1959	1978	1957
PRECIPITATION[2] TOTAL, INCHES													
Average	2.80	1.95	1.50	1.33	1.91	2.32	1.26	1.41	1.34	1.75	2.36	2.69	22.62
Highest monthly	6.92	4.38	2.98	3.39	3.83	5.50	3.74	4.81	4.45	4.37	6.08	5.69	6.92
Year	1954	1949	1934	1954	1980	1966	1948	1954	1959	1967	1973	1980	1954 Jan.
Lowest monthly	.05	.17	.49	.36	.29	.54	T	.00	.09	.07	.05	.48	.00
Year	1985	1935	1978	1947	1983	1961	1967	1969	1967+	1952	1936	1985	1969 Aug.
Highest daily	1.53	1.10	1.50	1.10	1.73	2.43	1.33	1.34	1.03	1.50	1.56	1.27	2.43
Year	1953	1961	1954	1974	1959	1966	1948	1954	1959	1934	1946	1964	1966 June
Snowfall													
Average	34.6	20.8	13.1	3.8	.7	.4	.0	.0	.4	3.3	16.2	26.9	120.2
Highest monthly	91.2	59.7	44.9	24.8	8.7	8.3	.0	.0	6.0	17.0	53.2	68.7	91.2
Year	1954	1937	1964	1954	1956	1966			1949	1975	1946	1971	1954 Jan.
Highest daily	20.0	15.0	16.0	9.0	6.0	8.3	.0	.0	4.0	8.0	16.5	17.0	20.0
Year	1954	1975	1954	1951	1956	1966			1937	1949	1958	1961	1954 Jan.
AVERAGE NUMBER OF DAYS													
Precipitation ≥0.10 inch	10	6	5	5	6	6	4	4	5	6	7	9	73
Snowfall ≥1.0 inch	10	6	5	2	*	*	0	0	*	1	5	8	37
Temperature, °F													
Max. ≥90	0	0	0	0	0	*	3	4	1	0	0	0	8
Max. ≤32	18	7	3	*	0	0	0	0	0	*	7	16	51
Min. ≤32	30	28	30	25	17	6	2	4	15	24	28	30	239
Min. ≤0	10	5	4	*	*	0	0	0	*	*	2	6	27

(con.)

Table 18. (Con.)

Summit[3] - Lat. 48° 19', Long. 113° 21'; Elevation 5,215 ft. Observation time mostly about 5 p.m.

Summary information	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
TEMPERATURE, °F[4]													
Daily maximum	22.7	29.6	33.7	44.1	55.2	63.7	72.6	70.9	60.3	48.5	33.1	26.5	46.7
Daily minimum	6.5	13.0	14.4	23.2	30.6	37.3	41.0	39.9	34.3	28.6	18.8	12.6	25.0
Monthly	14.6	21.3	24.1	33.7	42.9	50.5	56.8	55.4	47.3	38.6	26.0	19.6	35.9
Extremes:													
Highest	48	56	62	74	81	90	93	96	92	82	64	57	96
Year	1968+	1958	1960	1977+	1936	1936	1960	1969+	1967	1957	1975	1939	1969+
Lowest	-55	-43	-42	-30	2	15	22	19	6	-30	-42	-46	-55
Year	1959	1962	1960	1940+	1967	1951	1971	1939	1957	1935	1959	1968	1959
PRECIPITATION TOTAL, INCHES													
Average	5.13	3.88	3.20	2.82	3.02	3.80	1.40	1.82	2.34	2.82	4.21	4.80	39.24
Highest monthly	14.00	8.52	7.03	6.21	7.15	9.58	3.69	4.28	7.10	7.53	8.21	8.73	14.00
Year	1953	1979	1974	1970	1964	1975	1972	1977	1985	1950	1958	1949	1953 Jan.
Lowest monthly	.20	.59	.98	.60	1.12	.27	.03	.00	.20	.34[5]	.64	.95	.00
Year	1985	1935	1941	1944	1947	1961	1973	1955	1966	1953	1936	1935	1955 Aug.
Highest daily	2.95	2.50	1.45	1.96	2.55	7.31	1.55	2.00	1.60	1.55	2.35	2.25	7.31
Year	1953	1961	1945	1951	1964	1964	1972	1972	1940	1951	1978	1968	1964 June
Snowfall													
Average	52.6	40.2	34.4	24.0	8.6	1.4	.1	T	5.3	12.8	36.2	45.1	260.7
Highest monthly	131.1	94.5	72.7	87.0	28.5	16.5	4.0	.5	29.0[6]	61.0	76.9	94.1	131.1
Year	1972	1976	1956	1954	1938	1943	1972	1952	1961	1951	1946	1949	1972 Jan.
Highest daily	44.0	20.5	26.5	19.0	18.0[7]	16.5	4.0	.5	12.0	30.0	23.0	18.5	44.0
Year	1972	1970	1947	1974	1964	1943	1972	1952	1965	1951	1958	1938	1972 Jan.
AVERAGE NUMBER OF DAYS													
Precipitation ≥0.10 inch	15	12	11	9	8	8	5	5	6	9	11	14	113
Snowfall ≥1.0 inch	15	11	11	7	3	*	*	0	1	4	10	14	76
Temperature, °F													
Max. >90	0	0	0	0	0	0	*	*	*	0	0	0	*
Max. ≤32	24	16	13	3	1	0	0	0	*	2	13	21	93
Min. ≤32	30	28	30	27	20	7	4	5	14	20	26	30	241
Min. ≤0	11	5	5	1	0	0	0	0	0	*	3	6	31

[1]Temperature data missing 1939-45.
[2]Precipitation data missing 1939-41; snowfall missing 1939-44.
[3]Record begins in 1935; ends April 1979, except for precipitation. Fischer-Porter recording gauge data beginning May 1979.
[4]Adjusted to complete 30 years, 1951-80.
[5]Originally published monthly total corrected, based on recording gauge data.
[6]Includes estimate of 4.0 inches for missing daily amounts.
[7]24-hour increase in reported snow depth; snowfall data missing.

Table 19.--Monthly average precipitation (P) and snowfall (S), based on or adjusted to 30-year normal period, 1951-80. Stations in Montana except as noted in Alberta (AB).[1]

Station		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
		- - - - - - - - - -	- - - -	- - - -	- - - -	- - - -	Inches	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Babb 6NE	P	0.94	0.88	0.86	1.52	2.76	3.69	1.58	2.10	1.88	0.87	0.75	0.90	18.71
	S													~100
Browning	P	1.13	0.84	0.81	1.38	2.04	2.87	1.48	1.57	1.13	0.72	0.76	0.78	15.51
	S[2]	15.5	12.0	9.0	9.5	1.5	0.5			1.8	3.5	8.5	10.2	72.0
Carway, AB	P	1.26	1.32	1.40	1.93	2.68	3.52	1.44	1.87	1.71	0.87	1.06	1.22	20.29
	S	12.2	13.1	13.7	16.2	5.7	1.4	T	0.1	5.2	6.7	9.9	12.0	96.2
East Glacier	P	3.97	2.76	2.36	2.39	2.62	3.25	1.41	1.76	1.88	1.84	2.99	3.27	30.50
	S	39.3	32.8	26.6	20.2	4.4	0.4		T	2.6	8.4	26.6	32.9	194.2
Essex	P	5.52	4.05	2.92	2.65	2.80	3.30	1.52	1.95	2.63	3.00	4.50	5.10	39.94
	S	58.0	38.0	21.0	11.0	3.0	0.3			1.0	5.5	27.0	45.0	209.8
Flattop Mtn.	P[3]	10.95	8.03	7.45	5.77	5.15	5.90	2.55	2.90	3.90	5.50	9.25	11.03	78.38
Hungry Horse Dam	P	3.83	2.66	2.20	2.13	2.74	3.19	1.61	2.20	2.56	3.00	3.56	3.82	33.50
Kalispell AP	P	1.62	1.06	0.84	1.06	1.76	2.24	0.94	1.44	1.11	0.98	1.29	1.59	15.93
	S	19.3	10.9	6.7	2.4	1.1	T			0.1	1.4	8.6	16.5	66.9
Many Glacier	P[4]	4.40	3.40	3.05	2.65	3.05	4.30	2.23	2.67	2.98	2.60	3.55	4.15	39.03
Mountain View, AB	P	2.21	1.88	1.96	3.05	3.35	3.99	1.67	2.25	2.13	1.19	1.37	2.00	27.05
	S	21.9	18.8	19.6	24.7	6.1	1.0		T	6.7	9.2	13.2	20.0	141.2
Polebridge	P	3.07	2.04	1.47	1.42	1.93	2.35	1.20	1.46	1.41	1.73	2.31	2.93	23.32
	S	35.3	21.3	13.2	3.9	0.8	0.4			0.2	3.3	15.3	26.4	120.1
St. Mary	P[5]	2.88	2.15	1.77	2.00	2.60	3.30	1.50	1.82	2.00	1.55	2.25	2.60	26.42
	S	35.0	30.0	24.0	15.0	3.0	0.1			2.0	5.8	20.0	27.0	161.9
Summit	P	5.62	4.14	3.26	3.09	2.96	3.59	1.45	1.90	2.25	2.63	4.12	4.98	39.99
	S	56.8	41.4	32.9	26.0	8.1	0.7	T	T	5.3	13.7	34.6	47.8	267.3
Waterton Lakes, Belly R., AB	P	3.65	3.03	2.86	4.90	3.94	4.61	2.19	2.36	2.86	1.93	2.70	2.80	37.83
	S	35.2	29.0	26.9	39.5	9.4	1.9			3.8	10.3	21.9	24.7	202.6
Waterton Park Hqtrs., AB	P	4.63	3.90	3.47	4.56	3.73	4.17	1.58	2.57	3.38	3.01	3.22	3.98	42.20
	S	39.8	32.6	30.4	33.1	5.9	0.9			6.7	11.2	20.7	32.3	213.7
Waterton River Cabin, AB	P	3.59	2.40	2.33	3.63	3.29	4.58	1.72	2.39	2.50	2.01	2.31	2.87	33.60
	S	32.6	22.4	20.8	27.2	5.7	1.8			5.8	11.4	17.9	25.6	171.2
West Glacier	P	3.61	2.61	1.79	1.80	2.57	3.24	1.61	1.88	2.14	2.18	3.00	3.54	29.97
	S	43.4	25.9	15.7	4.1	0.8	0.3			0.2	2.2	16.6	35.9	145.1
Whitefish 5NW	P	2.44	1.81	1.33	1.56	2.48	3.09	1.36	1.78	1.53	1.46	2.05	2.41	23.30

[1] Montana and Alberta precipitation amounts may not be strictly comparable (see text).
[2] Includes estimates for much missing data.
[3] Estimated normal values based on only 8 years of data comparison with long-term stations.
[4] Estimated normal values based on only 6 or 7 years of data, mostly from site near hotel but also from ranger station.
[5] Normal values estimated from records since 1972, unofficial prior to 1981; snowfall averages unadjusted except for rounding.

Table 20.--Monthly and annual precipitation by individual years at Polebridge, West Glacier, Summit, and East Glacier. T denotes trace, amount too small to measure (less than 0.01 inch). M denotes amount missing, no estimate made. E denotes amount estimated in whole or part, different from originally published value or estimate; may include use of recording gauge data (except at East Glacier). P denotes estimate as published

Polebridge

Year	Precipitation												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	Inches												
1934	3.14	0.29	2.98	1.45	1.40	1.88	0.05	0.59	1.00	3.34	2.94	2.91	21.97
1935	6.21	.17	1.60E	1.31	.52	1.48	1.10	.80	.43	1.32	1.40	.64	16.98
1936	3.45E	2.31	1.63	1.78	1.39	1.28	.25	.38	1.29	.39	.05	2.82	17.02
1937	1.25	2.97	.50E	2.40	1.31	1.87	.59	.89	1.47	1.45	2.50	3.55	20.75
1938	1.40	2.22	1.64	1.43	2.00	1.95	1.91	.97	1.03	2.63E	1.90E	4.22	23.30
1939	M												M
1940	M												M
1941	M										2.66	3.24	M
1942	.58	.99	.85E	1.60E	3.79	3.50E	1.81	1.16	1.67	1.09	3.47	1.35	21.86
1943	3.37	1.37	2.04	.74	1.77	1.98	.72	1.24	.33	1.78	.43	1.49	17.26
1944	.81	.89	.86	.68	2.01	1.98	.41	1.45	1.18	.25	1.11	.85E	12.48
1945	2.05E	1.64	2.29	2.25	1.35	1.98	1.59	.91	2.08	1.79	3.69	2.00	23.62
1946	2.14	1.49	1.44	.63P	1.50P	2.19	1.03	1.11	1.28	2.92P	5.31	2.06	23.10
1947	2.08	1.39	1.73	.36	.90	2.97	.32	2.99	.67	3.70	.85	1.22	19.18
1948	1.54	2.69	1.74	2.24	1.88	3.44	3.74	1.16	.09	.52	2.58	2.06	23.68
1949	1.07	4.38	1.25	1.08	2.18	1.37	2.74	.63	1.01	1.32	2.96	3.06	23.05
1950	4.28	1.74	2.73	.88	.70	1.61	1.02	.96	.70	3.51	2.07	2.34	22.54
1951	3.48	3.19	2.05	1.26	2.45	2.55	1.38	3.14	2.91	4.34	1.77	4.69	33.21
1952	2.19	.99	.59	.48	1.40	3.35	.90	.72	.39	.07	.49	1.50	13.07
1953	6.32	1.86	.86	2.47	1.70	3.10	.08	1.14	.96	.43	2.32	4.13	25.37
1954	6.92	3.04	2.93	3.39	.97	1.65	.96	4.81	.91	1.16	1.55	.96	30.25
1955	.67	1.94	1.95	1.01	1.36	1.68	2.14	T	1.37	2.77	2.86	4.47	22.22
1956	1.99	1.51	1.82	1.81	1.40	2.45	1.60	1.09	1.34	1.44	.64	2.99	20.08
1957	1.54	3.27	.71	1.52	1.89	3.44	1.58	.54	.43	3.31	.53	2.75	21.51
1958	1.99	2.64	1.09	2.57	1.18	3.59	.74	1.09	2.06	1.68	4.21	2.49	25.33
1959	5.54	1.97	.52	2.71	3.38	1.40	.11	1.21	4.45	3.22	4.79	1.57	30.87
1960	1.44	1.25	1.59	1.12	2.47	.61	.10	1.86	.56	1.12	4.08	1.17	17.37
1961	1.69	3.57	.77	2.07	3.46	.54	1.69	.64	2.44	2.87	1.54	3.88	25.16
1962	1.38	1.27	1.71	1.43	1.77	.71	1.59	1.16	.90	2.21	3.12	2.49	19.74
1963	1.65	1.98	1.72	.90	.94	4.35	.81	1.57	1.58	1.28	2.48	1.77	21.03
1964	2.74	.72	2.52	.94	3.14	3.21	1.09	1.35	1.87	1.44	2.64E	5.31	26.97
1965	2.90	2.47	.64	2.83E	1.11	2.41	.91	1.71	2.51	.50	2.34	2.19	22.52
1966	3.35	.80	1.79	1.26	1.35	5.50	1.74E	.90	.75	2.04	4.12	2.18	25.78
1967	3.92	1.61	2.10	.51	.87	.86	T	T	.09	4.37E	1.48P	2.77	18.58
1968	1.68P	1.68P	.88P	.84P	2.94	1.84	.77	2.82	2.95	2.15	1.61	3.07	23.23
1969	5.38	.69	.75	1.17	1.18	3.67	.31	.00	1.22	1.19	.63E	1.70E	17.89
1970	3.94	1.63	1.40	.54	2.23	2.56	.95	.28	2.33	.99	4.01	5.14	26.00
1971	6.79	2.28	2.85	.80	2.75	5.28	2.17	1.55	.48	2.07	2.36	4.54	33.92
1972	5.36	3.31	1.81	1.72	1.41	1.65	1.66	1.08	1.70	1.65	.46	3.76	25.57
1973	1.91	1.31	1.31	1.16	.94	1.54	.37	1.00	1.19	1.37	6.08	3.34	21.52
1974	5.80	2.79	2.51	1.89	1.22	1.21	.60E	1.05	1.07	.10P	3.15	2.34	23.73
1975	3.10	3.36	1.39	.83	1.79	1.96	1.80	2.79	.51	3.99	1.59	2.98	26.09
1976	2.21	3.29	.94	.91	1.98	2.40	2.18	2.99	.70	.68	1.29	.71	20.28
1977	1.04	.66	1.64	.46	1.87	.79	1.57	2.25	1.66	.70	2.16	3.56	18.36
1978	1.38	.82	.49	1.29	3.30	1.29	3.42	2.64	1.28	.46	1.80	1.73	19.90
1979	1.21	3.53	1.45	1.95	1.53	1.32	.60	1.26	.29	1.91	.18	2.17	17.40
1980	2.60E	1.64	1.41	.72	3.83	3.71	1.31	1.24	1.24	.34	2.94	5.69	26.67
1981	.87	1.67	.76	1.77	3.04	3.88	1.35	.66	.77	.61	2.03	2.73	20.14
1982	4.00	3.81	2.43	2.26	.42	4.12	1.40	.66	2.15	.98	2.41	3.20	27.18
1983	2.38	1.14	1.87	1.12	.29	2.98	3.05	1.06	1.15	.56	2.74	1.72	20.06
1984	1.48	.51	1.03	1.15	2.73	1.61	.67	1.32	2.61	2.38	2.74	2.35	20.58
1985	.05	1.62	.82	1.04	1.01	2.06	.41	1.44	2.58	2.58	2.36	.48	16.45
10-year averages													
1941-50[2]	1.99	1.70	1.59	1.07	1.87	2.21	1.42	1.24	1.13	1.80	2.51	1.97	20.50
1951-60	3.21	2.17	1.41	1.83	1.82	2.39	1.06	1.56	1.54	1.95	2.32	2.67	23.92
1961-70	2.86	1.64	1.43	1.25	1.90	2.57	.99	1.04	1.66	1.90	2.40	3.05	22.69
1971-80	3.14	2.30	1.58	1.17	2.06	2.12	1.57	1.79	1.01	1.33	2.20	3.08	23.35

(con.)

Table 20. (Con.)

West Glacier, Park Headquarters

Year	Precipitation												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	Inches												
1921	4.35	2.91	4.26	1.75	0.87	2.55	0.72	0.96	2.61	1.54	5.05	2.95	30.52
1922	2.82	1.88	.70	2.24	1.70E	.59	2.19	1.29	1.27	2.59	1.45	6.53	25.25
1923	6.69	3.00E	.85E	1.20E	3.22	2.76	2.28	2.10	.21	3.123	3.88	4.59	33.90
1924	2.86	3.71	1.50E	.37	.45	5.21	.50	1.16	1.75E	2.90	2.11	5.26	27.78
1925	5.23	3.17	3.54	M	M	M	M	M	M	1.07	.98	2.38	M
1926	2.64	2.88	.22	.56	1.09	.80	.75	3.28	4.13	2.61	5.09	2.73	26.78
1927	4.21	4.06	1.68	1.01	2.98	2.40	1.05	1.50E	3.83	3.85	4.88	2.94	34.39
1928	1.79	.33	1.95	2.04	.62	3.94	1.90	.60	.09	2.07	1.57	2.19	19.09
1929	2.23	1.96	2.06	1.60	1.97	1.45	T	.36	.91	1.07	.46	6.02	20.09
1930	1.68	2.30	.87	2.27	2.59	2.16	1.07	.18	2.44	5.64	2.26	.97	24.43
1931	1.29	1.15	2.70	.98	2.44	2.52	1.94	T	3.47	1.44	1.65	3.14	22.72
1932	3.29	3.71	4.43	2.22	2.45	1.53	1.60	2.16	.56	2.44	6.03	3.91	34.33
1933	4.16	2.76	1.41	1.34	1.56	3.48	.05	2.91	3.21	5.96	2.60	7.53	36.97
1934	3.60	.21	3.17	1.08	1.86	2.19	.34	.32	1.00	2.75	3.26	2.93	22.71
1935	4.59	.44	1.64	1.09	1.15	1.61	1.12	.82	.52	1.00	2.38	1.07	17.43
1936	4.76	2.48	1.85	1.19	3.36	2.40	.38	.17	1.25	.91	.27	4.02	23.04
1937	2.40	2.99	.64	3.25	2.03	3.10	.72	.99	1.53	2.61	3.89	3.82	27.97
1938	2.30	1.95	.68	1.67	3.73	2.07	1.59	1.90	.79	2.71	2.41	4.68	26.48
1939	3.49	2.08	1.32	.99	1.88	4.15	.79	.29	1.39	.81	1.57	3.37	22.13
1940	1.32	5.87	2.00	2.62	1.65	1.72	1.56	.06	1.99	2.01	3.53	2.92	27.25
1941	2.91	.46	.51	.39	3.50	1.71	.75	.48	3.78	1.53	3.19	3.01	22.22
1942	.74	1.46	.94	2.10	4.29	3.87	2.33	.62	1.73	2.29	3.71	3.36	27.44
1943	2.61	2.66	1.62	1.21	2.38	3.69	.50	.36	.74	3.65	.94	1.48	21.84
1944	.67	.88	1.36	1.32	2.62	2.00	.70	1.98	2.74	.27	2.55	1.50	18.59
1945	2.62	1.86	2.58	2.59	2.12	3.16	.20	.45	4.19	4.18	4.22	2.11	30.28
1946	3.96	1.78	1.33	2.05	3.12	3.77	1.78	1.15	2.09	5.43	6.75	3.98	37.19
1947	4.01	1.89	2.54	1.45	.76	6.00	.95	4.73	1.54	4.08	1.94	1.69	31.58
1948	2.27	3.05	1.47	4.50	2.86	3.90	3.79	.67	.39	.94	3.70	3.53	31.07
1949	1.29	4.20	1.56	1.08	2.27	2.12	1.93	.55	1.61	3.45	2.73	3.86	26.65
1950	4.71	2.32	3.46	1.63	.91	3.52	1.02	1.78	1.10	5.87	2.35	5.17	33.84
1951	4.77	4.88	1.89	1.67	3.08	2.92	1.75	2.59	4.00	4.92	2.25	4.25	38.97
1952	2.51	1.29	1.13	.27	3.17	4.56	1.56	1.44	1.94	.08	.68	2.43	21.06
1953	7.07	3.24	1.62	3.19	2.99	3.95	.09	1.17	.60	.89	2.73	4.78	32.32
1954	4.98	2.69	2.47	2.91	2.13	3.60	3.15	5.14	1.64	1.70	2.94	1.79	35.14
1955	1.58	2.33	1.55	1.49	1.82	2.75	4.10	.00	2.25	5.08	3.55	2.80	29.30
1956	2.50	2.50	1.94	1.89	1.09	2.66	1.53	1.67	1.77	3.27	1.05	4.78	26.65
1957	2.60	3.67	1.60	1.58	1.62	3.99	.73	.69	.35	2.68	1.36	3.57	24.44
1958	3.04	3.29	1.41	3.45	1.40	3.36	.97	.62	3.87	1.80	5.64	3.38	32.23
1959	5.31	2.29	1.49	2.62	3.05	2.33	.05	1.55	4.08	2.69	7.52	1.15	34.13
1960	2.63	2.33	2.06	2.14	3.65	1.96	.00	2.75	.59	1.70	4.52	1.84	26.17
1961	2.20	4.73	2.12	2.57	3.29	.88	2.20	.76	3.33	1.75	2.18	4.05	30.06
1962	1.68	1.40	2.97	2.53	3.33	.76	.58	1.03	1.65	3.01	3.96	2.96	25.86
1963	2.24	3.54	2.25	1.39	1.16	6.64	1.70	.79	1.80	1.88	3.03	1.93	28.35
1964	3.74	1.33	3.68	1.50	4.62	4.81	3.50	1.51	2.71	2.28	4.28	7.42	41.38
1965	3.91	3.63	.47	3.33	1.06	3.79	2.25	4.12	3.03	.71	2.14	1.78	30.22
1966	3.66	1.59	2.27	.52	1.56	6.35	1.77	1.69	.75	2.69	4.35	5.03	32.23
1967	5.43	1.66	1.51	.62	1.15	1.94	.11	.17	.70	4.03	2.48	2.83	22.63
1968	1.97	2.58	1.57	1.15	4.94	3.22	.86	3.66	6.17	4.16	2.38	4.04	36.70
1969	6.67	.66	.71	1.61	1.90	4.55	.48	.01	3.20	1.98	1.16	1.64	24.57
1970	5.31	3.56	1.97	1.38	3.41	3.73	1.73	.70	3.21	1.93	4.74	3.72	35.39
1971	5.55	2.14	2.28	.95	2.84	5.94	1.75	1.91	1.24	2.88	3.77	4.90	36.15
1972	5.13	5.07	2.76	1.57	2.13	2.69	1.99	1.60	1.62	1.05	1.20	4.83	31.64
1973	2.48	1.07	1.26	1.59	2.09	2.32	.22	1.24E	2.62	2.59	4.63	3.27	25.38
1974	5.77	2.98	2.87	2.47	2.18	2.24	1.37	1.12	1.32	.14	4.53	2.52	29.51
1975	4.45	2.58	1.67	1.17	2.19	2.54	2.00	4.06	1.14	4.17	2.81	3.78	32.56
1976	3.75	3.08	.96	1.88	2.83	3.29	3.05	4.09	.80	.30	1.32E	1.91	27.26
1977	1.29	1.40	2.16	.33	2.13	.75	3.13	2.55	3.24	1.17	3.05E	6.02	26.87
1978	2.83	1.06	.51	2.43	3.68	2.12	3.04	4.48	1.64	.64	2.14	2.56	27.13
1979	1.05	3.59	1.23	2.60E	2.66	1.47	1.12	.85	.80	2.37	.65	2.64	21.03
1980	2.26	2.04	1.15	1.24	3.96	5.12	1.62	2.37	2.27	.86	2.89	7.72	33.50
1981	1.32	2.46	1.32	2.55	3.96	6.83	1.67	1.70	1.14	.90	2.76	2.43	29.04
1982	4.10	5.10	1.43	2.66	1.40	2.48	2.58	.89	2.12	1.80	3.48	3.62	31.66
1983	4.36	1.41	1.90	1.43	.96	4.41	4.70	.52	1.41	1.56	3.80	2.72	29.18
1984	3.02	1.01	2.07	2.16	3.54	2.83	.42	.73	3.61	3.36	3.46	3.19	29.40
1985	.16	1.66	1.32	1.16	1.75	1.60	.09	2.08	4.83	2.52	3.00	.81	20.98
10-year averages													
1921-30[1]	3.45	2.62	1.76	1.45	1.72	2.43	1.16	1.27	1.92	2.65	2.77	3.66	26.86
1931-40	3.12	2.36	1.98	1.64	2.21	2.48	1.01	.96	1.57	2.26	2.76	3.74	26.10
1941-50	2.58	2.06	1.74	1.83	2.48	3.37	1.40	1.28	1.99	3.17	3.21	2.97	28.07
1951-60	3.70	2.85	1.72	2.12	2.40	3.21	1.39	1.76	2.11	2.48	3.22	3.08	30.04
1961-70	3.68	2.47	1.95	1.66	2.64	3.67	1.52	1.44	2.66	2.44	3.07	3.54	30.74
1971-80	3.46	2.50	1.69	1.62	2.67	2.85	1.93	2.43	1.67	1.62	2.70	4.02	29.16

(con.)

Table 20.--(Con.)

Summit

Year	Precipitation Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	Inches												
1935	M	0.59	4.48	3.69	1.49	1.44	0.84	0.54	1.21	1.36	1.23	0.95	M
1936	6.28	3.96	3.92	1.23	1.21	2.60	.59	1.34	1.73	2.10	.64	5.34	30.94
1937	2.24	4.78	1.15	2.75	1.82	5.52	.27	1.09	2.23	2.48	2.96	5.20	32.49
1938	3.19	2.95	3.73	2.78	5.27	2.94	2.23	1.54	1.24	3.78	4.27	5.96	39.88
1939	4.01	1.94	2.40	2.40	1.78	3.41	.41	.78	1.95	2.06	.86	3.30	25.30
1940	.94	5.51	1.62	3.75	1.16	1.36	1.18	.67	4.50	1.68	2.95	1.74	27.06
1941	2.03	.67	.98	1.02	3.92	5.47	1.31	1.07	4.37	2.03	3.29	5.10	31.26
1942	.45	1.32	2.69	1.07	5.13	4.38	2.09	1.42	3.60	1.87	7.43	3.42	34.87
1943	4.86	3.70	3.50	2.69	3.86	6.81	.44	.70	1.97	2.89	1.12	1.63	34.17
1944	1.68	1.86	2.58	.60	4.37	3.00	.45	2.58	3.28	.84	2.36	1.86	25.46
1945	3.15	2.98	3.62	4.15	2.12P	4.79P	.88	.92	3.28	2.77	4.45	3.03	36.14
1946	4.23	2.77	2.05	.85	1.49	2.80	1.25	2.85	1.98	7.16	7.28	5.34	40.05
1947[3]	3.43	2.38	3.17	1.21	1.12	3.69	.45	3.05	1.95	4.51	2.36	2.32	29.64
1948	5.04	5.69	4.26	3.34	3.81	6.68	1.78	.60	.78	1.23	5.54	5.30	44.05
1949	2.29	6.27	2.40	2.04	4.18	1.40	1.59	.62	3.17	3.06	5.13	8.73	40.88
1950	9.35	3.55	4.94	3.12	1.87	5.44	2.02	1.89	1.69	7.53	5.92	5.95	53.27
1951	5.51	6.58	3.93	3.01	3.21	4.32	2.31	2.95	4.36	6.20	3.20	4.65	50.23
1952	4.35	2.15	2.55	.65	2.30	4.05	1.05	2.00	1.55	.75	1.63	3.12	26.15
1953	14.00	4.50	3.20	5.78	6.29	5.10	.21	1.03	2.38	.34E	4.15E	6.53E	53.51
1954	8.52	5.24	3.27	4.45	2.04	3.03	1.52	2.52	3.42	3.32	3.57	3.71	44.21
1955	1.66	2.50	4.52	1.75	3.13	3.89	3.49	.00	2.16	5.03	7.81	6.39	42.33
1956	3.76	5.56	4.73	2.55	2.00E	2.72E	1.60	3.23	2.19	3.53	2.58	6.85	41.30
1957	2.43	6.23	1.67	2.67	2.75	4.45	1.06	.95	1.30	2.24	1.99	6.11	33.85
1958	3.33	2.80	1.38	4.75	1.25	5.50	2.81	.81	4.03	2.47	8.21	4.20	41.54
1959	6.05	3.48	4.09	4.98	3.00	.95	.19	1.62	4.02	4.90	6.20	2.94	42.42
1960	3.64	2.02	3.26	4.91	2.82	1.49	.12	2.71	1.05	2.20	6.08	2.50	32.80
1961	3.55	8.37	2.83	4.95	2.80	.27	1.50	.40	5.53	3.69	4.55	5.15	43.59
1962	2.70	2.39	4.06	3.75	4.22	1.77	1.89	2.30	1.38	3.55	5.14	4.65	37.80
1963	2.85	3.72	3.29	1.80	1.60	5.65	1.80	.25	1.60	1.85	3.90	2.45	30.76
1964	5.95	2.50	4.30	3.55	7.15	8.89	2.25	1.50	2.75	4.45	3.90	8.20	55.39
1965	5.35	6.15	1.85	4.45	2.06E	3.33	.90	2.62	4.25	.55	4.60	3.50	39.61
1966	4.50	2.90	3.05	2.05	2.50	4.10	1.50	2.70	.20	3.05	5.65	3.95	36.15
1967	9.60	5.55	3.90	2.30	2.35	4.60	.29	.10	.80	5.05	1.97P	6.09	42.60
1968	4.37	2.99	3.25	2.18	2.09E	3.36E	.81	3.55	4.77	4.11E	2.70	6.16	40.34
1969	8.96	1.30P	1.92	1.06	2.13	5.58	.27	.18	1.70E	1.74	1.63	2.55	29.02
1970	6.83	5.73	3.86E	6.21	3.21	2.96	1.79E	1.33	2.37E	1.51E	4.48	6.03	46.31
1971	10.19	3.44	5.01	3.84	2.24E	3.12	1.20	1.20	1.77	3.08E	2.90E	7.89	45.88
1972	13.43	6.64	3.73E	2.55E	1.30	1.44	3.69	3.13	2.13	1.74	.87	5.01	45.66
1973	3.43	1.34	1.61	2.82	2.14	2.47	.03	.86	1.85	1.75	6.60	4.85	29.75
1974	9.95E	5.20	7.03	2.74	3.57	1.77	1.04	1.91	.78	.65	7.70	4.27	46.61
1975	5.80E	3.80	2.59	2.47	4.68	9.58	1.50	3.50	1.12	4.23	2.93	3.45	45.65
1976	4.77	6.17	1.70	1.70	2.05	2.40	1.66	3.06	.98	.41	2.34E	2.50E	29.74
1977	1.78E	1.33	2.84	.77	2.14	.50	1.98	4.28	2.21	1.72	5.62	7.21	32.38
1978	4.11	2.49	1.92	2.86	5.47	2.01	3.28	2.47	2.02	1.25E	6.04	5.58	39.50
1979[4]	3.59	8.52	2.17	2.81	1.8	2.2	1.1	.8	1.0	1.9	.6 E	6.3	32.79
1980	3.6	2.4	4.4	2.2	4.5 E	6.1	.7	3.0	1.8	1.5	4.2	6.6 E	41.0
1981	.8	3.4	1.4	3.5	6.4	5.2	2.2	1.2	.9	1.6	2.7	5.0	34.3
1982	M	6.2	4.6	3.4	4.2	2.4	1.8	1.2	2.3	1.0	4.7	M	M
1983	M	M	M	1.5	1.7	2.6	2.5	.7	3.7	1.5	3.8	2.6	M
1984	2.6	1.2	2.9	2.9	3.8	3.3	.4	1.1	5.5	4.6	4.8	6.3	39.4
1985	.2	3.1	1.4	3.1	4.3	2.2	.2	3.1	7.1	6.1	3.6	1.0	35.4
10-year averages													
1941-50	3.65	3.12	3.02	2.01	3.19	4.45	1.23	1.57	2.61	3.39	4.49	4.27	36.98
1951-60	5.33	4.11	3.26	3.55	2.88	3.55	1.44	1.78	2.65	3.10	4.54	4.70	40.89
1961-70	5.47	4.17	3.23	3.23	3.01	4.05	1.30	1.49	2.54	2.96	3.85	4.87	40.17
1971-80	6.07	4.13	3.30	2.48	2.99	3.16	1.62	2.42	1.57	1.82	3.98	5.37	38.91

(con.)

Table 20. (Con.)

East Glacier

Year	Precipitation												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	Inches												
1950	8.78	2.01	2.28	1.68	0.41	4.01	2.12	1.63	1.00E	5.46	6.89	2.97	39.24
1951	4.25	3.90	2.03	2.12	3.28	5.35	2.27	2.77	5.40	3.39	4.88	2.71	42.35
1952	1.77	1.18	1.57	.94	2.32	2.72E	2.99	1.95	.99	.80	.99	1.92	20.14
1953	9.49	2.75E	3.07	5.25P	6.68	6.61	.40	.72E	1.13	.21	3.59	3.44	43.34
1954	11.91	4.43E	4.96	4.78	1.19	1.20	.71	1.28	2.78	2.36	1.35	1.58	38.53
1955	.60	3.93	4.84	1.76	4.27	2.01	3.29	T	1.52	3.29	5.85E	4.02E	35.38
1956	2.10E	4.88E	3.72E	2.13E	3.29	1.97	2.75	2.80	1.37E	1.59	2.42	3.57	32.59
1957	2.29	5.01	.88	1.59	3.65	3.60	.63	1.18	1.71	1.83	.63	3.57	26.57
1958	1.35	1.24	1.09	2.81	1.33	7.07	3.38	.74	2.78	1.73	7.84	2.99	34.35
1959	4.52	2.24	1.85	4.80	2.30	1.24	.13	1.18	3.14	3.85	3.70	1.98	30.93
1960	2.11	1.30	1.82	2.72	1.51	1.00	.12	1.90	.60	.80	3.66	1.37	18.91
1961	2.40	6.00	2.44	3.21	2.11	.13	1.81	.43	4.18P	2.18	2.87	3.53	31.29
1962	1.86P	1.71P	3.12	1.65	2.56	1.31	2.41	.84	.85	1.83	3.34	3.31	24.79
1963	1.52	2.15	2.68	1.56	1.04	3.88	1.20	.50	1.70	1.26	2.98	1.43	21.90
1964	2.84	1.22	2.66	2.40	5.65	8.79	1.44	1.23	2.72	3.15	2.70	6.51	41.31
1965	4.14	4.65	2.28	2.99	1.78	2.92	.78	2.20	3.19	.56	3.31	2.57	31.37
1966	5.49	1.76	1.37	1.53	1.85	2.76	1.13	2.17	.24	1.99	4.57	1.38	26.24
1967	4.58	3.57	2.32	3.08	2.78	3.97	.05	T	.37	4.99	2.49	2.98	31.18
1968	2.43	1.45	2.10	1.52	2.38	3.03	.63	2.93E	3.21P	1.90	1.54	4.07	27.19
1969	9.35	.83	.80	.60	.70	5.75	.30	.11P	1.35P	1.25E	1.08E	1.53	23.65
1970	4.02	3.28	3.17	4.50	2.79	4.04	1.16	1.17	2.23	1.06	4.13	3.11	34.66
1971	8.63	1.54	3.79	2.12	2.08	2.04	1.64	2.04	1.17	3.37	1.65	5.87	35.94
1972	11.34	5.96	3.35	2.29	1.84	2.23	3.37	3.44	2.54	1.36	.14	4.17	42.03
1973	1.67	.91	.87	2.31	1.38	1.22	.06	.63	.75	1.69	4.15	1.57	17.21
1974	6.20	1.85	4.16	.66	1.95	1.22	.94	1.82	1.09	.38	2.66	1.51	24.44
1975	2.98	3.14	1.85	2.60	4.29	10.86	1.46	2.60	.40E	3.70	3.02	6.22	43.12
1976	2.29	4.22	.83	2.04	1.13	1.30	1.26	2.57	1.35	.15	1.59	1.85	20.58
1977	.93	.53	1.84	.28	1.37	.85	1.24	5.85	2.32	1.34	4.62	6.05	27.22
1978	2.94	1.50	.40	2.38	2.86	1.85P	3.62	1.68P	3.15	1.28	4.77	3.44	29.87
1979	.82	4.07	2.69	2.87	1.99	2.45	.82	1.90	.52	.94	.24	5.74	25.05
1980	2.29	1.51	2.26	2.11	6.37	4.18	.17	4.21	1.65	1.03	2.92	4.04	32.74
1981	.36	1.72	.50	1.62	5.75	2.21	1.50	.74	.36	.96	1.72	2.97	20.41
1982	4.57	3.87	3.14	1.61	2.81	1.88	.57	.94	1.79	.49	2.40	2.89	26.96
1983	3.32	1.07	2.29	.38	.86	2.57	2.32	.44	2.28	.39	2.11	1.50	19.53
1984	1.88	.41	1.30	2.66	1.96	3.41	.59	1.09	4.08	3.97	1.60	4.10	27.05
1985	.26	1.85	1.74	1.93	3.14	1.52	.25	3.23	5.93	3.32	2.67	.40	26.24
10-year averages													
1951-60	4.04	3.09	2.58	2.89	2.98	3.28	1.67	1.45	2.14	1.99	3.49	2.72	32.32
1961-70	3.86	2.66	2.29	2.30	2.36	3.66	1.09	1.16	2.00	2.00	2.93	3.04	29.37
1971-80	4.01	2.52	2.20	1.97	2.53	2.82	1.46	2.67	1.49	1.52	2.58	4.05	29.82

[1] 9-year average for months April through September.
[2] 9-year average for January through October adjusted to 10-year period.
[3] Data from gauge equipped with windshield beginning June 1947.
[4] Listed data from Fischer-Porter recording gauge beginning May 1979; amounts in one-tenth inch increments.

Table 21.--Precipitation statistics for West Glacier, Polebridge, and Summit; amounts in inches. Based on years 1949-78; see tables 18 and 20 for longer period averages and extremes. Number .00 denotes either zero or trace. Year (YR), first two digits omitted, is the most recent in cases of more than one occurrence

PRECIPITATION BY 10 (OR 11)-DAY AND MONTHLY PERIODS

STATION NUMBER 248809 WEST GLACIER YRS 1949-1978

PERIOD BEGINS	NO. YRS	MEAN TOTAL	10-DAY AND MONTHLY TOTALS STD DEV	MEDIAN	HIGHEST TOT.	YR	LOWEST TOT.	YR	MAXIMUM DAILY TOTALS EXTREME	YR	AVG MAX	STD DEV	MEDIAN
JAN 1	30	1.056	0.753	0.945	3.64	69	0.05	77	1.25	69	0.422	0.259	0.350
JAN 11	30	1.338	0.840	1.230	3.19	74	0.08	65	1.24	50	0.485	0.290	0.495
JAN 21	30	1.307	0.847	1.145	3.08	71	0.00	77	1.43	71	0.530	0.351	0.455
FEB 1	30	0.964	0.877	0.740	4.23	51	0.00	76	2.09	51	0.420	0.436	0.335
FEB 11	30	0.972	0.823	0.655	3.17	70	0.01	78	1.14	61	0.416	0.306	0.300
FEB 21	30	0.701	0.615	0.575	2.43	72	0.02	67	1.12	58	0.373	0.320	0.295
MAR 1	30	0.643	0.497	0.675	2.04	64	0.00	78	0.74	64	0.279	0.209	0.245
MAR 11	30	0.500	0.453	0.400	2.03	50	0.00	54	0.90	50	0.227	0.184	0.175
MAR 21	30	0.730	0.510	0.690	2.12	62	0.00	66	0.69	63	0.295	0.169	0.265
APR 1	30	0.450	0.408	0.320	1.55	62	0.00	49	0.79	62	0.232	0.190	0.215
APR 11	30	0.634	0.629	0.465	2.53	65	0.05	75	1.30	65	0.312	0.279	0.240
APR 21	30	0.680	0.501	0.630	2.01	53	0.00	77	1.41	74	0.376	0.317	0.320
MAY 1	30	0.821	0.889	0.550	4.06	64	0.01	66	1.57	64	0.386	0.370	0.265
MAY 11	30	0.758	0.593	0.640	2.22	71	0.02	73	1.05	59	0.381	0.285	0.295
MAY 21	30	0.876	0.788	0.620	3.57	68	0.04	58	1.43	68	0.419	0.358	0.290
JUN 1	30	1.197	1.169	0.805	4.85	66	0.00	60	3.47	64	0.675	0.797	0.400
JUN 11	30	0.863	0.767	0.785	3.33	65	0.00	55	1.52	65	0.449	0.388	0.455
JUN 21	30	1.150	1.013	0.885	4.13	63	0.00	77	1.70	71	0.555	0.445	0.435
JUL 1	30	0.802	0.761	0.530	2.60	55	0.00	67	1.68	64	0.432	0.387	0.310
JUL 11	30	0.441	0.490	0.220	1.82	76	0.00	73	1.20	78	0.289	0.326	0.115
JUL 21	30	0.378	0.456	0.180	1.79	77	0.00	60	1.64	77	0.256	0.356	0.140
AUG 1	30	0.385	0.458	0.220	1.85	76	0.00	59	0.95	60	0.248	0.269	0.160
AUG 11	30	0.523	0.749	0.065	2.96	78	0.00	71	1.12	76	0.261	0.325	0.060
AUG 21	30	0.940	0.916	0.660	3.69	54	0.00	70	1.73	54	0.462	0.386	0.415
SEP 1	30	0.664	0.530	0.595	1.92	52	0.00	56	1.59	52	0.413	0.338	0.385
SEP 11	30	0.692	0.784	0.540	3.88	68	0.00	60	1.50	68	0.383	0.345	0.315
SEP 21	30	0.777	0.759	0.485	2.62	69	0.00	75	0.94	51	0.353	0.279	0.280
OCT 1	30	0.758	0.765	0.610	3.40	55	0.00	71	1.76	55	0.375	0.362	0.330
OCT 11	30	0.750	0.829	0.555	3.01	50	0.00	78	1.49	50	0.370	0.384	0.250
OCT 21	30	0.875	0.632	0.815	2.17	67	0.00	62	1.55	49	0.417	0.352	0.350
NOV 1	30	0.792	0.589	0.680	2.36	58	0.02	57	1.21	73	0.434	0.313	0.380
NOV 11	30	1.170	0.824	1.120	4.18	59	0.14	61	1.20	59	0.490	0.292	0.455
NOV 21	30	1.086	0.741	0.940	3.42	64	0.00	56	1.30	64	0.475	0.300	0.415
DEC 1	30	1.107	0.803	0.990	3.30	77	0.08	59	1.17	75	0.420	0.304	0.335
DEC 11	30	1.122	0.666	1.140	2.65	56	0.02	76	0.88	56	0.462	0.203	0.455
DEC 21	30	1.271	0.927	1.100	4.47	64	0.16	63	2.38	64	0.496	0.435	0.425
MONTH													
JAN	30	3.701	1.644	3.700	7.07	53	1.17	49	1.43	71	0.754	0.323	0.735
FEB	30	2.637	1.186	2.540	5.07	72	0.66	69	2.09	51	0.729	0.405	0.635
MAR	30	1.872	0.781	1.780	3.68	64	0.47	65	0.90	50	0.440	0.177	0.430
APR	30	1.764	0.857	1.595	3.45	58	0.27	52	1.41	74	0.526	0.327	0.445
MAY	30	2.456	1.043	2.180	4.94	68	0.91	50	1.57	64	0.717	0.379	0.595
JUN	30	3.209	1.487	3.070	6.64	63	0.75	77	3.47	64	1.029	0.718	0.845
JUL	30	1.620	1.112	1.710	4.10	55	0.00	60	1.68	64	0.608	0.444	0.565
AUG	30	1.848	1.418	1.530	5.14	54	0.00	55	1.73	54	0.618	0.364	0.610
SEP	30	2.132	1.334	1.705	6.17	68	0.35	57	1.59	52	0.648	0.333	0.595
OCT	30	2.383	1.510	2.130	5.87	50	0.08	52	1.76	55	0.679	0.416	0.695
NOV	30	3.049	1.534	2.770	7.52	59	0.68	52	1.30	64	0.724	0.256	0.655
DEC	30	3.500	1.464	3.475	7.42	64	1.15	59	2.38	64	0.722	0.392	0.610

(con.)

Table 21. (Con.)

PRECIPITATION BY 10 (OR 11)-DAY AND MONTHLY PERIODS

STATION NUMBER 246615 POLEBRIDGE YRS 1949-1978

		10-DAY AND MONTHLY TOTALS							MAXIMUM DAILY TOTALS				
PERIOD BEGINS	NO. YRS	MEAN TOTAL	STD DEV	MEDIAN	HIGHEST TOT.	YR	LOWEST TOT.	YR	EXTREME	YR	AVG MAX	STD DEV	MEDIAN
JAN 1	29	0.928	0.735	0.900	3.15	53	0.00	58	1.53	53	0.361	0.291	0.290
JAN 11	29	1.236	1.009	0.980	4.29	74	0.07	65	1.18	74	0.460	0.325	0.310
JAN 21	29	1.007	0.755	1.010	3.00	54	0.00	77	1.28	54	0.391	0.313	0.320
FEB 1	29	0.709	0.507	0.700	1.83	75	0.00	77	1.03	63	0.343	0.255	0.320
FEB 11	29	0.758	0.678	0.570	2.38	61	0.00	78	1.10	61	0.339	0.280	0.260
FEB 21	29	0.577	0.543	0.400	1.92	57	0.00	67	0.95	72	0.314	0.283	0.230
MAR 1	29	0.580	0.448	0.580	1.65	64	0.03	65	0.88	72	0.272	0.213	0.260
MAR 11	29	0.378	0.364	0.220	1.43	50	0.00	58	0.81	50	0.191	0.184	0.140
MAR 21	29	0.572	0.520	0.390	2.24	54	0.05	53	1.50	54	0.289	0.292	0.220
APR 1	29	0.399	0.428	0.240	2.08	54	0.00	69	0.60	54	0.194	0.155	0.160
APR 11	29	0.472	0.422	0.410	1.89	65	0.01	52	1.04	65	0.244	0.207	0.190
APR 21	29	0.545	0.446	0.400	1.60	53	0.00	60	1.10	74	0.272	0.226	0.220
MAY 1	30	0.598	0.565	0.470	2.89	64	0.00	65	0.86	64	0.284	0.201	0.265
MAY 11	30	0.594	0.525	0.545	2.15	59	0.00	73	1.73	59	0.340	0.358	0.270
MAY 21	30	0.653	0.495	0.550	2.11	68	0.04	58	1.27	68	0.363	0.278	0.305
JUN 1	30	0.867	0.968	0.480	4.44	66	0.03	60	2.43	66	0.477	0.565	0.270
JUN 11	30	0.584	0.429	0.450	1.55	65	0.02	55	0.99	56	0.346	0.273	0.250
JUN 21	30	0.835	0.802	0.685	3.20	71	0.00	77	1.75	51	0.428	0.422	0.305
JUL 1	30	0.550	0.502	0.355	1.57	71	0.00	60	1.13	66	0.304	0.295	0.220
JUL 11	30	0.384	0.363	0.290	1.47	78	0.00	59	0.68	77	0.238	0.206	0.195
JUL 21	30	0.332	0.357	0.235	1.42	49	0.00	74	0.86	75	0.200	0.214	0.150
AUG 1	30	0.396	0.422	0.235	1.59	60	0.00	69	0.87	63	0.258	0.261	0.185
AUG 11	30	0.396	0.511	0.220	2.08	68	0.00	73	0.81	51	0.216	0.250	0.130
AUG 21	30	0.641	0.731	0.425	3.18	54	0.00	70	1.34	54	0.347	0.352	0.225
SEP 1	30	0.450	0.391	0.425	1.46	59	0.00	69	0.67	74	0.250	0.202	0.215
SEP 11	30	0.488	0.459	0.405	1.93	59	0.00	60	1.03	59	0.276	0.233	0.240
SEP 21	30	0.473	0.491	0.310	2.15	51	0.00	75	0.70	51	0.242	0.184	0.215
OCT 1	30	0.556	0.527	0.515	2.02	75	0.00	71	1.04	75	0.306	0.259	0.290
OCT 11	30	0.566	0.566	0.340	1.86	51	0.00	78	0.84	50	0.294	0.268	0.210
OCT 21	30	0.699	0.555	0.635	2.34	67	0.00	74	1.38	67	0.322	0.286	0.265
NOV 1	29	0.607	0.568	0.430	2.17	73	0.03	57	1.10	73	0.369	0.302	0.290
NOV 11	29	0.857	0.705	0.790	2.62	59	0.02	61	0.95	60	0.373	0.276	0.250
NOV 21	29	0.938	0.653	0.760	2.60	70	0.00	56	1.34	58	0.448	0.336	0.360
DEC 1	30	0.897	0.700	0.675	2.60	70	0.04	78	0.90	70	0.358	0.235	0.330
DEC 11	30	0.902	0.611	0.870	2.52	55	0.02	76	1.11	55	0.388	0.262	0.340
DEC 21	30	1.054	0.755	0.850	3.05	64	0.01	56	1.27	64	0.412	0.288	0.390
MONTH													
JAN	29	3.171	1.891	2.740	6.92	54	0.67	55	1.53	53	0.629	0.338	0.520
FEB	29	2.044	1.010	1.940	4.38	49	0.66	77	1.10	61	0.566	0.274	0.500
MAR	29	1.530	0.733	1.590	2.93	54	0.49	78	1.50	54	0.450	0.286	0.360
APR	29	1.417	0.771	1.180	3.39	54	0.46	77	1.10	74	0.401	0.226	0.340
MAY	30	1.845	0.818	1.730	3.46	61	0.70	50	1.73	59	0.587	0.326	0.490
JUN	30	2.286	1.316	1.890	5.50	66	0.54	61	2.43	66	0.756	0.559	0.560
JUL	30	1.265	0.831	1.215	3.42	78	0.00	67	1.13	66	0.438	0.296	0.410
AUG	30	1.432	1.089	1.115	4.81	54	0.00	69	1.34	54	0.512	0.332	0.455
SEP	30	1.411	0.955	1.205	4.45	59	0.09	67	1.03	59	0.418	0.198	0.400
OCT	30	1.821	1.249	1.435	4.57	67	0.07	52	1.38	67	0.520	0.302	0.565
NOV	29	2.402	1.397	2.320	6.08	73	0.46	72	1.34	58	0.640	0.322	0.550
DEC	30	2.853	1.237	2.760	5.31	64	0.71	76	1.27	64	0.593	0.255	0.520

(con.)

Table 21. (Con.)

PRECIPITATION BY 10 (OR 11)-DAY AND MONTHLY PERIODS

STATION NUMBER 247978 SUMMIT YRS 1949-1978

PERIOD BEGINS	NO. YRS	MEAN TOTAL	10-DAY AND MONTHLY TOTALS STD DEV	MEDIAN	HIGHEST TOT.	YR	LOWEST TOT.	YR	MAXIMUM DAILY TOTALS EXTREME	YR	AVG MAX	STD DEV	MEDIAN
JAN 1	30	1.991	1.421	1.705	6.00	53	0.23	77	2.95	53	0.801	0.655	0.720
JAN 11	30	2.120	1.641	1.795	6.48	72	0.20	65	2.11	72	0.677	0.503	0.610
JAN 21	30	1.659	1.152	1.430	3.93	71	0.00	77	1.85	71	0.608	0.435	0.560
FEB 1	30	1.400	1.009	1.210	5.06	51	0.01	77	1.67	51	0.520	0.369	0.475
FEB 11	30	1.527	1.204	1.180	4.65	61	0.26	69	2.50	61	0.605	0.534	0.450
FEB 21	30	1.169	0.888	0.890	3.43	56	0.04	73	1.10	72	0.491	0.301	0.460
MAR 1	30	1.165	0.663	1.195	2.57	72	0.14	76	0.97	72	0.440	0.228	0.400
MAR 11	30	0.842	0.546	0.815	1.96	59	0.07	62	0.88	49	0.346	0.226	0.295
MAR 21	30	1.282	0.766	1.010	2.79	62	0.26	57	1.15	63	0.438	0.263	0.320
APR 1	30	0.829	0.622	0.710	2.25	62	0.00	49	1.25	62	0.395	0.287	0.395
APR 11	30	1.030	0.776	0.865	3.25	65	0.00	56	1.70	65	0.450	0.315	0.395
APR 21	30	1.231	0.897	0.985	3.29	70	0.00	52	1.96	51	0.546	0.512	0.360
MAY 1	30	1.131	1.091	0.935	5.55	64	0.04	58	2.55	64	0.517	0.463	0.425
MAY 11	30	0.814	0.596	0.820	2.29	70	0.04	73	2.21	70	0.406	0.399	0.385
MAY 21	30	1.006	1.101	0.725	5.42	53	0.00	63	1.73	53	0.461	0.427	0.330
JUN 1	30	1.422	1.671	0.745	8.09	64	0.05	60	7.31	64	0.809	1.336	0.375
JUN 11	30	1.160	1.553	0.760	8.40	75	0.00	61	3.70	75	0.590	0.709	0.400
JUN 21	30	0.957	0.984	0.705	4.65	69	0.00	64	2.10	69	0.547	0.539	0.325
JUL 1	30	0.654	0.720	0.390	2.78	78	0.00	70	1.11	78	0.303	0.266	0.240
JUL 11	30	0.557	0.632	0.515	3.29	72	0.00	73	1.55	72	0.323	0.336	0.240
JUL 21	30	0.301	0.350	0.160	1.24	62	0.00	74	0.85	75	0.233	0.266	0.140
AUG 1	30	0.525	0.621	0.235	2.00	72	0.00	75	2.00	72	0.347	0.466	0.140
AUG 11	30	0.487	0.696	0.195	2.93	68	0.00	71	1.20	68	0.245	0.292	0.170
AUG 21	30	0.844	0.705	0.605	2.54	75	0.00	69	1.12	51	0.383	0.270	0.360
SEP 1	30	0.672	0.613	0.500	2.52	59	0.00	58	1.05	65	0.396	0.318	0.320
SEP 11	30	0.807	0.735	0.585	3.05	68	0.00	74	1.18	68	0.417	0.298	0.425
SEP 21	30	0.839	0.773	0.750	2.99	51	0.00	66	1.40	54	0.412	0.341	0.350
OCT 1	30	0.859	0.623	0.700	3.11	55	0.00	78	1.45	55	0.434	0.398	0.340
OCT 11	30	0.915	0.837	0.760	3.05	51	0.00	74	1.18	51	0.405	0.322	0.360
OCT 21	30	1.093	0.806	0.975	2.95	51	0.00	58	1.55	51	0.483	0.350	0.435
NOV 1	29	1.046	1.016	0.700	3.60	74	0.05	69	1.50	74	0.484	0.366	0.400
NOV 11	29	1.557	0.893	1.750	3.41	78	0.20	72	2.35	78	0.668	0.510	0.650
NOV 21	29	1.734	0.909	1.650	3.20	64	0.00	56	1.35	55	0.667	0.371	0.700
DEC 1	29	1.578	1.028	1.320	4.24	68	0.14	69	2.25	68	0.631	0.474	0.500
DEC 11	30	1.451	0.918	1.165	4.31	71	0.20	65	1.37	71	0.542	0.331	0.500
DEC 21	30	1.947	1.226	1.855	5.23	49	0.14	59	1.80	64	0.640	0.404	0.550
MONTH													
JAN	30	5.770	3.314	4.635	14.00	53	1.66	55	2.95	53	1.039	0.616	0.835
FEB	30	4.096	1.909	3.635	8.37	61	1.30	69	2.50	61	0.853	0.494	0.700
MAR	30	3.289	1.267	3.255	7.03	74	1.38	58	1.15	63	0.606	0.243	0.600
APR	30	3.090	1.449	2.780	6.21	70	0.65	52	1.96	51	0.797	0.469	0.600
MAY	30	2.951	1.415	2.425	7.15	64	1.25	58	2.55	64	0.817	0.540	0.650
JUN	30	3.538	2.191	3.225	9.58	75	0.27	61	7.31	64	1.283	1.356	0.980
JUL	30	1.512	0.977	1.505	3.69	72	0.03	73	1.55	72	0.511	0.340	0.490
AUG	30	1.856	1.185	1.900	4.28	77	0.00	55	2.00	72	0.621	0.430	0.525
SEP	30	2.318	1.322	2.070	5.53	61	0.20	66	1.40	54	0.693	0.288	0.655
OCT	30	2.067	1.789	2.760	7.53	50	0.34	53	1.55	51	0.713	0.363	0.625
NOV	29	4.336	2.021	4.480	8.21	58	0.87	72	2.35	78	0.912	0.455	0.890
DEC	29	4.988	1.798	4.850	8.73	49	2.45	63	2.25	68	0.968	0.444	0.840

Table 22.--Frequency distribution of daily precipitation amounts at West Glacier, Polebridge, and Summit; based on years 1949-78

PRECIPITATION - PERCENT FREQUENCY OF DAILY AMOUNTS (INCHES)

- GIVEN TO NEAREST TENTH PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 248809 WEST GLACIER 1949-1978

PERIOD BEGINS	TOTAL NUM. DAYS	AMOUNT EQUAL TO OR GREATER THAN 0.01	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	3.00
JAN 1	299	589	458	328	191	110	64	43	27	13	7			
JAN 11	300	637	483	377	243	153	113	87	47	13	7			
JAN 21	330	585	448	358	224	133	73	52	33	18	9			
FEB 1	300	487	377	273	157	93	63	40	23	10	7	7	3	
FEB 11	300	540	417	290	167	90	63	50	27	20	7			
FEB 21	247	457	348	211	150	105	65	49	32	16	6			
MAR 1	300	420	310	233	103	60	33	23	10					
MAR 11	300	400	270	183	80	33	13	7	7	3				
MAR 21	330	427	327	239	130	64	36	15	3					
APR 1	300	337	233	157	80	37	10	7	7					
APR 11	300	393	267	197	107	60	33	23	20	7	3			
APR 21	300	390	253	200	123	70	50	23	10	7	7			
MAY 1	300	373	307	233	140	93	60	37	17	13	10	7		
MAY 11	300	377	277	217	150	80	57	33	17	10	7			
MAY 21	330	427	294	215	127	85	61	36	24	12	9			
JUN 1	300	437	320	257	170	110	83	63	40	33	23	10	7	3
JUN 11	300	423	287	200	140	113	83	47	23	17	10	3		
JUN 21	300	417	323	257	177	140	100	63	57	33	17	10		
JUL 1	300	310	230	197	137	83	73	57	43	27	7	3		
JUL 11	300	260	157	110	63	47	43	23	20	7	7			
JUL 21	330	206	148	106	55	27	18	18	9	6	6	3		
AUG 1	300	257	157	97	67	40	30	23	17	7				
AUG 11	300	230	157	127	87	67	57	37	27	7	3			
AUG 21	330	364	252	209	152	115	79	48	33	12	9	3		
SEP 1	300	293	233	180	113	83	60	37	23	7	3	3		
SEP 11	300	310	233	197	123	87	57	33	20	13	3	3		
SEP 21	300	340	263	210	163	100	63	30	23	7				
OCT 1	300	340	267	197	133	93	47	40	27	7	7	3		
OCT 11	300	370	300	207	117	80	57	33	23	13	10			
OCT 21	330	403	315	239	133	79	39	33	30	15	3	3		
NOV 1	300	400	290	210	133	93	67	47	33	17	3			
NOV 11	300	563	407	327	200	127	90	63	47	23	13			
NOV 21	300	520	410	327	190	123	80	50	37	17	13			
DEC 1	300	550	427	343	227	127	67	43	27	10	7			
DEC 11	300	580	470	340	210	137	90	50	27	7				
DEC 21	330	606	485	367	197	115	73	48	27	9	6	3	3	
MONTH														
JAN	929	603	463	354	220	132	83	60	36	15	8			
FEB	847	497	383	261	158	96	64	46	27	15	7	2	1	
MAR	930	416	303	219	105	53	28	15	6	1				
APR	900	373	251	184	103	56	31	18	12	4	3			
MAY	930	394	292	222	139	86	59	35	19	12	9	2		
JUN	900	426	310	238	162	121	89	58	40	28	17	8	2	1
JUL	930	257	177	137	84	52	44	32	24	13	6	2		
AUG	930	286	190	146	103	75	56	37	26	9	4	1		
SEP	900	314	243	196	133	90	60	33	22	9	2	2		
OCT	930	372	295	215	128	84	47	35	27	12	6	2		
NOV	900	494	369	288	174	114	79	53	39	19	10			
DEC	930	580	461	351	211	126	76	47	27	9	4	1	1	

(con.)

Table 22. (Con.)

PRECIPITATION - PERCENT FREQUENCY OF DAILY AMOUNTS (INCHES)

- GIVEN TO NEAREST TENTH PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 246615 POLEBRIDGE 1949-1978

PERIOD BEGINS	TOTAL NUM. DAYS	0.01	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	3.00
		AMOUNT EQUAL TO OR GREATER THAN												
JAN 1	290	528	407	300	179	90	59	34	10	7	3	3		
JAN 11	290	572	455	362	217	131	90	59	45	34	10			
JAN 21	319	517	404	292	176	91	47	31	22	13	3			
FEB 1	289	405	308	225	128	87	45	17	17	7	3			
FEB 11	290	455	345	238	121	52	45	38	24	10	3			
FEB 21	238	416	307	218	105	71	50	38	21	17				
MAR 1	290	434	307	200	83	55	24	14	10	7				
MAR 11	290	324	203	131	66	28	14	3	3	3				
MAR 21	319	404	248	102	85	38	31	16	6	3	3	3		
APR 1	290	317	217	155	66	31	21	7	3					
APR 11	290	376	259	152	66	38	21	17	3	3	3			
APR 21	290	369	255	193	103	59	28	14	3	3	3			
MAY 1	300	390	283	210	110	60	23	17	17	7				
MAY 11	300	317	230	193	100	50	27	23	13	10	7	3		
MAY 21	330	361	264	170	109	64	39	18	10	6	3			
JUN 1	300	377	283	203	123	83	60	47	37	20	17	7	3	
JUN 11	300	350	260	177	90	60	40	17	17	13				
JUN 21	300	387	277	217	157	83	60	50	27	13	10	7		
JUL 1	300	320	257	190	87	50	33	20	13	10	7			
JUL 11	300	243	173	117	73	33	27	20	7					
JUL 21	330	182	148	91	55	24	15	9	6	3				
AUG 1	300	213	170	120	60	40	33	20	13	7				
AUG 11	300	207	170	133	77	33	30	17	10	3				
AUG 21	330	300	233	173	94	52	33	27	24	15	6			
SEP 1	300	263	213	140	87	57	30	13	10					
SEP 11	300	283	220	160	97	33	27	17	10	3	3			
SEP 21	300	300	217	157	93	53	37	13	3					
OCT 1	300	310	240	150	97	73	33	27	17	3	3			
OCT 11	300	293	227	177	113	60	43	33	20	3				
OCT 21	330	379	297	221	103	61	45	18	9	6	3			
NOV 1	290	324	238	176	100	59	45	28	21	14	7			
NOV 11	290	483	376	276	148	76	62	45	31	14				
NOV 21	290	448	390	269	172	110	62	41	24	17	10			
DEC 1	300	470	367	280	183	110	67	50	13	7				
DEC 11	300	503	393	307	153	97	47	30	27	10	3			
DEC 21	330	509	403	291	176	130	67	33	21	6	3			
MONTH														
JAN	899	538	422	317	190	103	65	41	26	18	6	1		
FEB	817	426	321	228	119	70	47	31	21	11	2			
MAR	899	388	253	171	78	40	23	11	7	4	1	1		
APR	870	354	244	167	78	43	23	13	3	2	2			
MAY	930	356	259	190	106	58	30	19	16	8	3	1		
JUN	900	371	273	199	123	76	53	38	27	16	9	4	1	
JUL	930	246	191	131	71	35	25	16	9	4	2			
AUG	930	242	192	143	77	42	32	22	16	9	2			
SEP	900	282	217	152	92	48	31	14	8	1	1			
OCT	930	329	256	184	104	65	41	26	15	4	2			
NOV	870	416	334	240	140	82	56	38	25	15	6			
DEC	930	495	388	292	171	113	60	38	20	8	2			

(con.)

Table 22. (Con.)

PRECIPITATION - PERCENT FREQUENCY OF DAILY AMOUNTS (INCHES)

- GIVEN TO NEAREST TENTH PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 247978 SUMMIT 1949-1978

PERIOD BEGINS	TOTAL NUM. DAYS	0.01	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	3.00
		AMOUNT EQUAL TO OR GREATER THAN												
JAN 1	300	663	603	517	333	220	160	110	90	50	27	10	7	
JAN 11	300	697	637	507	357	243	193	137	103	60	27	10	3	
JAN 21	330	606	530	421	267	179	127	88	55	24	15	3		
FEB 1	300	537	497	413	263	180	123	83	43	20	13	3		
FEB 11	300	643	563	417	260	160	110	73	50	37	20	7	3	
FEB 21	247	543	490	393	263	186	130	97	61	24	8			
MAR 1	300	580	520	413	217	143	83	47	37	10				
MAR 11	300	500	467	297	143	90	53	30	20	3				
MAR 21	330	567	506	394	252	127	73	61	33	9	6			
APR 1	300	423	377	270	167	93	63	33	20	13	3			
APR 11	300	453	407	303	200	133	77	50	30	13	3	3		
APR 21	300	503	457	353	223	137	70	50	37	27	23	13		
MAY 1	300	450	403	313	187	133	83	50	43	23	10	7	7	
MAY 11	300	387	340	253	163	97	60	27	23	7	3	3	3	
MAY 21	330	388	355	224	152	100	67	55	39	21	18	3		
JUN 1	300	430	380	270	190	117	93	80	63	43	27	10	7	3
JUN 11	300	373	327	250	187	120	80	57	47	37	27	10	3	3
JUN 21	300	380	330	247	150	83	57	47	43	27	17	7	7	
JUL 1	300	293	253	200	133	87	50	33	17	10	3			
JUL 11	300	247	210	170	87	57	53	33	20	10	3	3		
JUL 21	329	146	116	85	46	24	18	18	16	3				
AUG 1	300	207	180	127	73	50	43	33	23	17	10	3	3	
AUG 11	300	240	207	147	103	53	33	23	13	10	7			
AUG 21	330	352	321	248	155	103	70	30	18	9	3			
SEP 1	300	287	257	193	113	67	63	43	27	20	3			
SEP 11	300	347	303	220	153	93	73	57	37	7	3			
SEP 21	300	340	310	237	163	123	70	40	30	13	7			
OCT 1	300	300	283	240	143	110	83	50	37	23	13			
OCT 11	300	357	330	273	167	117	83	53	40	10	3			
OCT 21	330	442	406	315	182	112	67	45	39	12	9	3		
NOV 1	290	400	352	276	186	124	93	69	45	28	14	3		
NOV 11	289	609	543	426	291	187	121	83	69	28	17	10	3	
NOV 21	290	600	541	434	317	221	155	114	83	41	24			
DEC 1	290	586	538	428	293	228	145	90	62	21	14	7	3	
DEC 11	300	600	560	450	257	180	113	70	53	20	17			
DEC 21	330	661	594	464	324	218	158	115	64	39	15	3		
MONTH														
JAN	930	654	588	480	317	213	159	111	82	44	23	8	3	
FEB	847	576	521	409	262	175	123	84	51	27	14	4	1	
MAR	930	549	498	369	205	120	70	46	30	8	2			
APR	900	460	413	309	197	121	70	44	29	18	10	6		
MAY	930	408	366	262	167	110	70	44	35	17	11	4	3	
JUN	900	394	346	256	176	107	77	61	51	36	23	9	6	2
JUL	929	226	191	150	87	55	40	28	18	8	2	1		
AUG	930	269	239	176	112	70	49	29	18	12	6	1	1	
SEP	900	324	290	217	143	94	69	47	31	13	4			
OCT	930	369	342	277	165	113	77	49	39	15	9	1		
NOV	869	536	479	379	265	177	123	89	66	32	18	5	1	
DEC	920	617	565	448	292	209	139	92	60	27	15	3	1	

Table 23.--Precipitation statistics (inches) for additional stations during fire season. Based on indicated years; 1951-80, where available

P R E C I P I T A T I O N BY 10 (OR 11)-DAY AND MONTHLY PERIODS

STATION NUMBER 240206 DESERT MTN L.O. YRS 1951-1970

PERIOD BEGINS	NO. YRS	MEAN TOTAL	10-DAY AND MONTHLY TOTALS STD DEV	MEDIAN	HIGHEST TOT	YR	LOWEST TOT	YR	MAXIMUM DAILY TOTALS EXTREME	YR	AVG MAX	STD DEV	MEDIAN
JUL 1	15	.725	.765	.380	2.63	55	.04	60	1.22	64	.335	.347	.160
JUL 11	20	.347	.367	.190	1.09	70	.00	60	.70	70	.209	.207	.135
JUL 21	20	.364	.477	.095	1.50	70	.00	68	1.03	57	.232	.278	.075
AUG 1	20	.533	.747	.215	3.18	60	.00	66	2.40	60	.331	.537	.155
AUG 11	19	.202	.325	.030	1.16	54	.00	70	1.55	68	.098	.136	.030
AUG 21	16	.732	.741	.550	2.57	51	.00	55	1.75	54	.417	.381	.415
MONTH													
JUL	15	1.237	1.127	1.090	4.45	55	.09	60	1.22	64	.443	.365	.390
AUG	16	1.262	.874	1.265	3.04	56	.00	55	2.40	60	.509	.357	.535
JUL		1.44*											
AUG		1.47*											

STATION NUMBER 240217 HUNGRY HORSE R.S. YRS 1958-1980

PERIOD BEGINS	NO. YRS	MEAN TOTAL	10-DAY AND MONTHLY TOTALS STD DEV	MEDIAN	HIGHEST TOT	YR	LOWEST TOT	YR	MAXIMUM DAILY TOTALS EXTREME	YR	AVG MAX	STD DEV	MEDIAN
MAY 1	18	.880	.712	.750	2.86	64	.02	66	1.52	64	.489	.359	.470
MAY 11	19	.857	.707	.710	2.21	71	.00	80	1.02	58	.445	.316	.500
MAY 21	17	1.137	1.056	.600	3.77	80	.00	58	1.77	68	.556	.541	.330
JUN 1	23	1.320	1.189	.940	5.26	66	.00	60	2.80	66	.703	.711	.440
JUN 11	23	.805	.664	.740	2.93	65	.01	77	1.10	65	.420	.300	.370
JUN 21	23	1.126	1.162	.950	4.12	63	.00	79	2.15	67	.582	.578	.440
JUL 1	23	.628	.516	.550	1.71	78	.00	68	.96	66	.342	.286	.320
JUL 11	23	.543	.641	.220	2.24	77	.00	73	.91	76	.293	.317	.180
JUL 21	23	.357	.511	.080	1.66	70	.00	80	1.25	77	.220	.324	.070
AUG 1	23	.441	.673	.110	3.02	60	.00	79	1.22	60	.255	.303	.110
AUG 11	23	.760	1.012	.260	3.38	78	.00	73	1.70	68	.413	.535	.120
AUG 21	23	.922	.804	.610	2.54	75	.00	69	1.24	71	.425	.332	.390
SEP 1	23	.803	.450	.750	1.69	61	.00	66	.88	80	.430	.242	.420
SEP 11	23	.801	.805	.480	3.45	68	.00	79	1.52	68	.479	.410	.330
SEP 21	21	.642	.619	.420	1.95	69	.00	79	.82	58	.280	.225	.230
MONTH													
MAY	17	2.817	1.027	2.790	4.57	78	1.40	63	1.77	68	.875	.441	.790
JUN	23	3.251	1.744	2.820	6.58	63	.60	77	2.80	66	.974	.733	.850
JUL	23	1.528	1.099	1.510	4.12	77	.04	60	1.25	77	.537	.343	.500
AUG	23	2.123	1.538	1.700	4.73	78	.05	69	1.70	68	.694	.463	.640
SEP	21	2.193	1.288	1.910	6.16	68	.46	66	1.52	68	.651	.318	.650

* SUM OF MEANS AVAILABLE FOR THE THREE 10 (OR 11)-DAY PERIODS

(con.)

PRECIPITATION BY 10 (OR 11)-DAY AND MONTHLY PERIODS

STATION NUMBER 240301 BELLY RIVER R.S. YRS 1951-1980

PERIOD BEGINS	NO. YRS	MEAN TOTAL	10-DAY AND MONTHLY TOTALS STD DEV	MEDIAN	HIGHEST TOT, YR	LOWEST TOT, YR	MAXIMUM DAILY TOTALS EXTREME YR	AVG MAX	STD DEV	MEDIAN
JUN 21	13	1.202	1.307	.850	4.62 69	.00 61	2.14 69	.684	.694	.390
JUL 1	22	.637	.520	.430	1.83 56	.06 70	1.15 75	.365	.314	.245
JUL 11	28	.586	.736	.320	3.31 72	.00 51	1.55 72	.312	.389	.160
JUL 21	28	.480	.479	.325	1.96 58	.00 73	1.03 75	.293	.274	.210
AUG 1	28	.671	.710	.470	2.76 52	.00 55	1.52 76	.379	.372	.240
AUG 11	29	.648	.832	.260	3.08 66	.00 70	1.65 66	.340	.437	.150
AUG 21	29	.935	.975	.670	4.11 51	.00 70	1.55 79	.484	.466	.370
SEP 1	21	.891	.952	.580	3.02 65	.00 57	1.70 80	.477	.472	.370
MONTH										
JUL	22	1.579	1.082	1.410	4.04 58	.20 59	1.55 72	.483	.311	.420
AUG	28	2.311	1.457	1.905	5.14 77	.03 55	1.65 66	.797	.507	.635
JUL		1.70*								
AUG		2.25*								

STATION NUMBER 240303 ST MARY R.S. YRS 1951-1980

PERIOD BEGINS	NO. YRS	MEAN TOTAL	10-DAY AND MONTHLY TOTALS STD DEV	MEDIAN	HIGHEST TOT, YR	LOWEST TOT, YR	MAXIMUM DAILY TOTALS EXTREME YR	AVG MAX	STD DEV	MEDIAN
JUN 21	13	.657	.692	.550	2.14 55	.00 64	1.72 55	.442	.564	.300
JUL 1	24	.673	.779	.400	2.70 56	.01 67	1.98 56	.487	.599	.215
JUL 11	28	.445	.556	.205	2.32 72	.00 69	1.04 72	.227	.272	.080
JUL 21	28	.354	.437	.200	1.72 62	.00 80	1.15 75	.239	.297	.130
AUG 1	28	.529	.518	.355	1.80 56	.00 79	1.25 72	.322	.302	.265
AUG 11	28	.591	.742	.250	2.56 80	.00 70	1.20 80	.313	.370	.120
AUG 21	28	.686	.725	.380	3.00 51	.00 69	1.38 51	.375	.405	.220
SEP 1	19	.574	.533	.420	1.93 65	.00 57	1.02 65	.335	.291	.250
MONTH										
JUL	24	1.508	1.273	1.235	4.02 55	.02 67	1.98 56	.639	.570	.460
AUG	28	1.805	1.344	1.485	4.75 77	.00 55	1.38 51	.660	.394	.690
JUL		1.47*								
AUG		1.81*								

* SUM OF MEANS AVAILABLE FOR THE THREE 10 (OR 11)-DAY PERIODS

Table 24.--Frequency distribution of daily precipitation amounts at stations as in table 25

PRECIPITATION - PERCENT FREQUENCY OF DAILY AMOUNTS (INCHES)

- GIVEN TO NEAREST TENTH PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240206 DESERT MTN L.O. 1951-1970

PERIOD BEGINS	TOTAL NUM. DAYS	0.01	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	3.00
					AMOUNT EQUAL TO OR GREATER THAN									
JUL 1	168	351	256	220	131	77	60	36	30	24	12			
JUL 11	200	235	160	115	60	40	20	10	10					
JUL 21	220	191	127	86	55	45	41	14	9	5	5			
AUG 1	200	255	195	140	70	55	40	25	10	5	5	5	5	
AUG 11	196	173	122	82	46	20	15	5	5	5	5	5		
AUG 21	192	349	260	214	130	99	73	47	26	16	16	5		
MONTH														
JUL	588	252	175	134	78	53	39	19	15	9	5			
AUG	588	259	192	145	82	58	43	26	14	9	9	5	2	

STATION NUMBER 240217 HUNGRY HORSE R.S. 1958-1980

PERIOD BEGINS	TOTAL NUM. DAYS	0.01	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	3.00
					AMOUNT EQUAL TO OR GREATER THAN									
MAY 1	174	402	316	224	132	109	98	57	34	23	6	6		
MAY 11	189	344	280	196	132	106	101	79	53	16	5			
MAY 21	202	436	322	257	149	99	79	59	35	30	20	10		
JUN 1	229	454	367	306	210	127	87	66	66	44	26	9	9	
JUN 11	230	387	322	222	126	83	61	52	35	17	9			
JUN 21	230	326	270	239	174	117	83	61	48	43	22	9	4	
JUL 1	230	300	226	187	109	74	57	35	22	9				
JUL 11	230	261	196	139	87	65	43	30	26	17				
JUL 21	253	150	126	91	59	40	20	16	8	8	4			
AUG 1	230	226	157	117	61	48	39	30	17	13	4			
AUG 11	230	243	204	161	109	83	57	48	39	30	22	9		
AUG 21	253	372	281	206	162	99	67	43	36	20	4			
SEP 1	230	322	274	243	161	104	61	52	26	9				
SEP 11	229	293	262	197	122	79	52	48	44	26	9	4		
SEP 21	213	362	291	230	150	94	56	28	19	5				
MONTH														
MAY	565	395	306	227	138	104	92	65	41	23	11	5		
JUN	689	389	319	255	170	109	77	60	49	35	19	6	4	
JUL	713	234	181	137	84	59	39	27	18	11	1			
AUG	713	283	216	163	112	77	55	41	31	21	10	3		
SEP	672	324	275	223	144	92	57	43	30	13	3	1		

(con.)

Table 24. (Con.)

PRECIPITATION - PERCENT FREQUENCY OF DAILY AMOUNTS (INCHES)

- GIVEN TO NEAREST TENTH PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240301 BELLY RIVER R.S. 1951-1980

PERIOD BEGINS	TOTAL NUM. DAYS	AMOUNT EQUAL TO OR GREATER THAN 0.01	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	3.00
JUN 21	150	380	287	240	147	113	80	60	53	40	33	7	7	
JUL 1	225	382	253	196	98	80	49	27	22	13	4			
JUL 11	279	312	222	168	97	57	32	22	18	14	7	4		
JUL 21	308	224	172	136	66	52	36	16	13	6	3			
AUG 1	280	311	236	179	118	64	43	39	29	11	7	4		
AUG 11	289	287	218	145	107	76	42	24	24	21	17	3		
AUG 21	319	395	276	191	132	100	63	38	28	19	16	9		
SEP 1	215	353	270	195	121	98	84	51	47	28	23	9		
MONTH														
JUL	812	298	212	164	86	62	38	21	17	11	5	1		
AUG	888	333	244	172	119	81	50	34	27	17	14	6		

STATION NUMBER 240303 ST MARY R.S. 1951-1980

PERIOD BEGINS	TOTAL NUM. DAYS	AMOUNT EQUAL TO OR GREATER THAN 0.01	0.05	0.10	0.20	0.30	0.40	0.50	0.60	0.80	1.00	1.50	2.00	3.00
JUN 21	143	322	245	154	98	56	21	21	21	21	21	7		
JUL 1	207	304	208	145	87	48	39	29	24	24	14	14		
JUL 11	269	257	193	100	63	41	30	15	15	4	4			
JUL 21	297	189	131	88	61	30	20	17	13	7	3			
AUG 1	278	263	191	144	97	72	40	22	18	11	4			
AUG 11	280	261	189	132	93	61	46	43	43	18	4			
AUG 21	308	318	233	153	91	55	42	29	26	16	10			
SEP 1	203	335	256	177	99	59	39	34	25	10	5			
MONTH														
JUL	773	243	173	107	69	39	28	19	17	10	6			
AUG	866	282	206	143	94	62	43	31	29	15	6			

Table 25.--Monthly and annual (seasonal) snowfall by individual years. M denotes amount missing, no estimate made. T denotes trace, amount too small to measure. E denotes amount partially or wholly estimated. Zero amounts not listed in early and late season. + denotes total incomplete due to missing data

Polebridge

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Annual
	Snowfall												
	Inches												
1945-46		M	M	16.5	12.0	28.9	18.1	7.0	T	0.0			82.5+
46-47			2.5E	53.2	19.2E	19.2	3.5	17.7	.0	.0			115.3
47-48		T	.0	6.3E	11.0	14.9	28.2	17.4	15.4	T			93.5
48-49			T	31.3	46.0	20.3	32.0	11.1	.8	2.0	T		143.5
49-50		6.0E	8.2	3.2	60.9	66.4	15.5	9.8	2.0	T	M		172.0
1950-51		T	T	26.2E	19.4	51.4	23.2	23.0	10.8	2.0	T		156.0
51-52			16.5	2.5	58.2E	33.0	11.5E	2.0	.0	T			123.7
52-53			.0	1.3	34.8	26.7	21.3E	5.5	6.5	T			96.1
53-54			.0	7.8E	23.4E	91.2	17.0	28.0E	24.8	.0			192.2
54-55			T E	3.0	7.1	9.8	17.6	19.6	.1	.0			57.2
55-56			T	39.6	25.9	22.2	24.0	21.0E	4.5	8.7			145.9
56-57			5.0E	5.0E	29.7	39.3	39.3	6.5	.0	.0			124.8
57-58		.5E	13.3	5.5	41.5E	15.2E	20.8	7.1	T E	.0E			103.9
58-59		.0E	.0	36.2	25.5	50.8	34.5	1.7	1.5	1.0			151.2
59-60			4.3	47.1	4.5	18.9	14.5	14.5	4.0E	T E			107.8
1960-61			.0	14.7	17.1	7.2	25.6	6.4	9.9E	T E			80.9
61-62			12.4	22.4	37.9	15.3	8.9	12.4	1.5	.0			110.8
62-63			.0	4.3	12.0	16.2	9.3E	2.0E	1.0E	.0			44.8
63-64			.0	18.6	16.4	38.2	7.6	44.9	1.3	4.0E			131.0
64-65			.0	13.5E	55.3	40.3	21.0	10.1	5.0E	.0			146.7
65-66		2.5	.0	16.5	20.7	60.4	20.5	9.9	4.0	.0	8.3		142.8
66-67			3.0	22.8	15.0	39.0	17.9	17.4	1.0	1.0E			116.1
67-68			T E	M	27.0	M	M	M	M	T			M
68-69		T	1.0E	4.5	39.0	73.5	8.0	3.0	T	.0			129.0
69-70			5.0	3.5E	12.5E	42.0	9.0	10.0E	T E	1.0			83.0
1970-71			.5	30.0	43.9	61.0	15.1	23.5	1.0	2.0	4.8		181.8
71-72			6.0	18.8	68.7	76.1	26.6	10.3	8.0	.0			214.5
72-73		4.5	15.0	3.0	11.8	12.0	15.0	8.7	1.0	.0			71.0
73-74			T E	43.6	25.8	25.0	35.0	15.3	5.4	.0			150.1
74-75		T	.0	9.1	27.1	50.7	55.3	16.0	4.4	1.9			164.5
75-76			17.0	18.0	16.2	40.7	58.4	14.0	1.9	.0	T		166.2
76-77			2.0	2.6	7.8	8.8	4.0	17.0	3.5	.0			45.7
77-78			.0	11.0	34.5	24.0	16.0	5.0	2.0	2.0			94.5
78-79			T	9.0	20.9	13.6E	20.0	12.5	11.8	.0			87.8
79-80			2.0E	1.3	11.8	22.0E	20.0	16.0	.0	.0			73.1
1980-81			T	13.5	39.0	4.5	10.5	4.0	8.0	.0			79.5
81-82			T	17.0	21.5	58.5	12.0	13.5	16.0	.0			138.5
82-83			.0	24.5	29.0	11.5	5.5	9.0	4.3	.0			83.8
83-84			.0	12.3	23.9	17.5	9.0	7.0	4.0	T			73.7
84-85			14.5	12.5	35.5E	1.0	17.5	6.5	3.0	.0			89.5
85-86			3.3	17.0	6.0	(Data not available at publication time)							
10-year averages													
1951-60		.1	3.9	17.4	27.0	35.9	22.4	12.9	5.2	1.2	T		126.0
1961-70		.3	2.1	13.4	25.3	36.9	14.2	12.9	2.6	.6	.8		109.1
1971-80		.5	4.3	14.6	26.9	33.4	26.5	13.8	3.9	.6	.5		125.0

(con.)

Table 25. (Con.)

West Glacier, Park Headquarters

Year	Snowfall												
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Annual
	Inches												
1920-21			1.8	1.4	13.8	30.0	17.0	27.3	2.0	M			93.3+
21-22		T	.0	42.0	17.5	43.0	21.0	8.0	6.0	M			137.5+
22-23			T	9.0	M	45.2	M	M	M	1.0			M
23-24			T	M	43.5	29.5	2.0	M	T	.0	6.0		M
24-25		M	M	24.0	53.2	63.3	12.5	16.5	M	M			169.5+
25-26		M	3.5	4.0	4.2	30.0	17.7	1.0	3.5	.0			63.9+
26-27		7.5	.0	21.0	28.5	53.2	41.5	7.5	2.0	M			161.2+
27-28			2.3	31.8	44.5	26.0	2.5	6.0	8.0	.0			121.1
28-29			T	1.5	29.5	32.8	42.5	12.5	4.7	1.0			124.5
29-30			T	1.0	51.8	19.8	14.0	2.0	.0	.0			88.6
1930-31			5.0	30.5	9.6	11.8	6.7	12.8	.0	.0			76.4
31-32			.0	15.0	29.4	29.3	26.3	20.8	.0	.0			120.8
32-33			3.5	30.5	38.0	37.7	43.6	14.7	8.5	.0			176.5
33-34			8.2	2.5	42.2	13.7	1.5	20.5	6.0	.0			94.6
34-35		T	1.0	1.0	39.1	54.0	2.8	14.0	5.5	.0			117.4
35-36			3.0	13.7	15.5	52.7	32.0	29.2	.0	.0			146.1
36-37			2.0	3.8	27.5	51.5	57.5	2.5	.0	.0			144.8
37-38		T	.0	9.0	16.7	9.9	26.1	5.5	T	T			67.2
38-39			.0	7.0	55.7	37.5	23.4	13.0	.0	.0			136.6
39-40			3.8	.0	2.2	15.7	31.8	.6	2.0	.0			56.1
1940-41			.0	26.3	14.5	41.0	3.5	.5	T	.0			85.6
41-42		T	.0	4.0	16.0	6.0	17.5	8.0	1.5	T			53.0
42-43			4.0	30.5	37.2	40.5	19.7	20.0	.0	0.5			152.4
43-44			2.5	2.0	10.5	6.2	11.4	13.6	.0	.0			46.2
44-45			.0	11.2	15.1	9.7	13.0	14.7	5.0	.0			68.7
45-46		.5	2.5	33.1	20.2	47.7	24.3	8.4	T	.0			136.7
46-47			.5	41.7	26.8	33.8	12.0	26.7	2.0	.0			143.5
47-48		T	.0	21.5	23.8	14.8	29.9	25.2	24.0	.0			139.2
48-49			.0	27.7	54.1	31.3	37.4	16.6	T	.0			167.1
49-50		1.0	T	2.7	73.1	66.4	25.1	27.5	2.5	T	T		198.3
1950-51			T	22.6	30.5	57.5	30.5	35.5	4.5	5.0	T		186.1
51-52			28.0	14.5	74.2	49.3	21.5	17.3	T	.0			204.8
52-53			.0	1.0	45.4	50.0	35.5	11.9	17.4	.0			161.2
53-54			.0	3.5	37.8	74.5	15.9	32.0	23.0	.0	T		186.7
54-55			.0	1.0	18.7	27.4	41.2	28.2	4.9	.0			121.4
55-56			1.5	24.5	35.7	37.5	47.0	15.5	9.0	5.0			175.7
56-57			3.5	8.5	32.3	64.5	53.8	11.5	.0	.0			174.1
57-58			3.5	11.0	36.3	30.0	30.5	10.0	.0	.0			121.3
58-59			T	29.0	39.5	50.0	40.5	9.5	3.0	.0			171.5
59-60			2.5	58.3	7.5	38.9	31.5	20.0	11.0	.0			169.7
1960-61			T	18.0	26.5	10.5	16.5	9.0	6.5	2.0			89.0
61-62		T	5.5	26.5	41.7	20.0	9.0	15.6	3.5	.0			121.8
62-63		T	.0	7.0	13.5	25.0	22.0	4.0	3.0	.0			74.5
63-64			.0	12.0	15.5	54.7	15.3	50.4	4.0	5.0			156.9
64-65			1.0	24.2	67.4	46.2	25.9	10.4	7.0	.5			182.6
65-66		3.2	.0	6.4	23.8	49.7	26.5	7.2	.5E	.0	8.0		125.3
66-67			1.0	22.1	29.6	36.8	22.5	13.0	1.5	1.3E			128.5
67-68			T E	10.8	33.0	31.0	5.0	3.0	T	.0			82.8
68-69		M	T	4.0	51.5	76.1	9.8	2.5	T	.0			143.9+
69-70			2.0E	3.5	14.5	55.7	20.0	21.0	T	2.0			118.7
1970-71			.0	27.0	71.0	57.3	19.5	15.5	.0	.0	1.5		191.8
71-72			1.0	24.0	95.0	93.0	43.0	22.0	1.0	.0			279.0
72-73		3.5E	10.0	4.0	21.0	17.5	16.5	9.0	3.0	T			85.0
73-74			T	51.0	33.0	35.0	34.0	11.0	1.0	.0			165.0
74-75			.0	7.0	32.0	53.0	41.0	10.0	7.0E	.0			150.0
75-76			7.0E	31.5	17.0	43.5	26.5	11.6	T	.0			137.6
76-77			.0	10.3	14.0	13.0	8.0	23.0	2.5	.0			70.8
77-78			T E	19.0	55.0	40.5	14.0	3.5	.5	1.5E			134.5
78-79			.0	14.0	49.6	35.5	29.0	16.0	10.0E	.0			154.1
79-80			.0	1.0	13.0E	29.0	25.0	22.0	.0	.0			90.0
1980-81			.0	3.0	41.5	8.5	13.0	4.0E	4.0E	T			74.0
81-82			.0	5.5E	29.0	74.5	30.0	9.0	7.0	.0			155.0
82-83			.0	31.0	48.0	14.5	9.0	2.5	2.0E	.0			107.0
83-84			.0	3.0	36.5	11.5	8.0	8.0	T	.0			67.0
84-85			15.0	22.0	65.5	2.0	26.0	12.0	3.0	T			145.5
85-86			4.0	20.0	20.0	(Data not available at publication time)							
10-year averages													
1921-30[1]		.9	.8	15.1	31.8	37.3	19.0	10.1	3.3	.3	.6		119.2
1931-40		T	2.7	12.3	27.6	31.4	25.2	13.4	2.2	T	.0		113.7
1941-50		.2	1.0	20.1	29.1	29.7	19.4	16.1	3.5	.1	T		119.1
1951-60		.0	3.9	17.4	35.8	48.0	34.8	19.1	7.3	1.0	T		167.3
1961-70		.3	1.0	13.5	31.7	40.6	17.3	13.6	2.6	1.2	.8		122.4
1971-80		.4	1.9	18.9	40.1	41.7	25.7	14.4	2.5	0.2	.2		145.8

(con.)

Table 25. (Con.)

Summit

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Annual
	Snowfall												
	- - - Inches - - -												
1935-36		0.0	8.5	12.7	11.7	88.0	58.3	53.7	11.1	0.0	0.0		244.0
36-37		2.0	11.4	9.6	76.5	36.4	80.6	17.0E	23.2	.0	.0		256.7
37-38		6.0	.0	31.1	61.7	35.5	48.6	53.0	13.7	28.5	T		278.1
38-39		.0	20.5	65.7	76.5	57.9	27.0	36.1	18.8	.0	.0		302.5
39-40		T	6.2	5.0	14.0	10.4	81.4	14.9	39.4	.0	.0		171.3
1940-41		.0	6.0	47.2	19.4	37.5	14.3	10.9	2.5	5.5	.0		143.3
41-42		2.5	4.0	23.3	28.8	5.9	25.5	42.3	2.8	17.0	.0		152.1
42-43		6.0	17.7	70.1	47.5	70.8	60.3	41.0	14.0	25.0	16.5		368.9
43-44		7.0	12.6	9.7	12.5	24.7	30.3	41.5	1.5	5.0	.0		144.8
44-45		1.5	.0	39.3	33.9	33.0	38.3	41.3	65.3	M	M		274.8+
45-46		15.0	13.5	44.4	24.0	45.2	27.0	27.5	7.7	2.4	.0		206.7
46-47		T	30.8	76.9	54.4	38.2	38.4	50.5	12.6	T	T		301.8
47-48		17.0	1.0	28.7	21.5	43.6	53.7	60.8	34.8	11.0	.0	T	272.1
48-49		T	7.3	46.3	50.9	30.1	59.4	22.7	9.7	14.3	T		240.7
49-50		5.7	12.3	16.7	94.1	91.2	22.6	45.6	30.8	12.4	14.7		346.1
1950-51		5.5	12.0E	51.9E	40.3E	77.3E	42.4	43.3E	26.3	25.5E	5.0		329.5
51-52		8.0	61.0	30.5	58.5	49.8	21.0	27.0	4.6	T	.0		260.4
52-53	0.5	.0	1.0	21.2	26.4	68.9	26.9	30.7	74.8	2.5	T		252.9
53-54		T	M	M	M	123.0	45.3E	66.0	87.0	4.0	.0		M
54-55		14.0	M	M	M	M	M	M	18.0	16.0	.0		M
55-56		.0	M	M	M	M	M	72.7	32.0	27.0	.0		M
56-57		.0	M	M	M	M	81.0E	20.0	26.0E	.0	.0		M
57-58		9.0	22.0	18.0	57.0	31.0	27.0	23.0	19.0	.0	.0		206.0
58-59		15.0	2.0	65.0	47.0	65.0E	42.0	32.0	22.0	6.0	T		296.0
59-60		6.0E	19.0E	67.0	18.0	[2]38.0	19.0	[2]32.0	42.0	14.0	.0		255.0
1960-61		.0	4.0	39.0	25.0	27.0E	46.0	26.0	42.0	8.0	.0		217.0
61-62		29.0E	22.0	43.0	45.0E	19.0	20.0	42.0	12.0	4.0	T		236.0
62-63	T	10.5E	M	21.0E	38.0	32.0	18.0	23.0E	16.0E	5.0	M		
63-64		.0	M	M	M	M	M	M	M	M	.0		M
64-65	T	T	6.0	25.0	72.0	56.0	70.0	19.0	23.0	.5E	T		271.5
65-66		19.0	1.0E	36.0	33.0	55.0	22.0	21.0	8.0	5.0	10.0E		210.0
66-67		.0	11.0	42.0	29.0	25.0	24.0	17.0	20.0	14.0E	.0		182.0
67-68		0.5E	6.0	23.0E	43.3	26.0	11.5	17.2	18.0	3.0E	T		148.5
68-69		8.9	16.7	28.7E	71.4	104.4	14.5	27.8	5.5	2.5	3.0		283.4
69-70		.0	15.0	19.5	30.5	77.0	69.3	44.0	83.0	17.0	T		355.3
1970-71		5.0	10.5	34.9	79.5	107.5	30.0E	59.8	15.0	11.0	2.5		355.7
71-72	T	1.5	20.0E	23.0E	86.0E	131.1	71.2E	31.5	15.9	8.0	.0	4.0	392.2
72-73		18.0	26.0E	8.5E	42.0	23.5	22.5	16.0	19.6	4.5	T		180.6
73-74		2.0	4.0	51.5	41.3	70.0E	67.5	62.5	22.5	10.0	.0		331.3
74-75		.5	6.0E	31.5	58.0	28.0	68.0	44.5	21.5	8.0	.0		266.0
75-76		.0	22.0	29.8	23.5	47.5	94.5	23.0	8.5	4.0	T		252.8
76-77		1.0	10.0	18.5	21.3	25.5	12.0	31.5	7.0E	2.0	.0		128.8
77-78		.0	5.0	51.0	76.5	63.5	21.5	13.5	18.0	16.0	.0		265.0
78-79		.0	13.5	50.0	84.0	48.5	90.5	22.0	21.5	M	M		330.0+
10-year averages (available years)													
1941-50		5.5	10.5	40.3	38.7	42.0	37.0	38.4	18.2	10.3	3.5	T	244.4
1951-60	.1	5.8	19.5	42.3	41.2	64.7	38.1	38.5	35.2	9.5	.5		295.4
1961-70	T	6.8	10.2	30.8	43.0	46.8	32.8	26.3	25.3	6.6	1.3		229.9
1971-79	T	3.1	13.0	33.2	56.9	60.6	53.1	33.8	16.6	7.9	.3	0.5	279.0

(con.)

Table 25. (Con.)

East Glacier

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Annual
						Snowfall							
						Inches							
1949-50		M	M	M	81.7	78.9	6.0	21.5	21.0	3.0	M		M
1950-51		M	T	59.1	15.7	63.2	39.9	30.2	16.2	12.0	2.0E		238.3+
51-52	T	5.0	52.0	14.0	46.5	27.0	20.0	23.0	15.0	.0E	.0E		202.5
52-53		T	3.0	17.5	19.5	M	M	28.0	72.0	1.0	T		M
53-54		T	T	M	M	M	59.0	M	M	M	T		M
54-55		8.0	5.0	10.0	20.0	11.0	53.0	63.0	14.0	16.0	T		200.0
55-56		T	M	56.5	27.5	28.0	65.0	44.5	26.5	14.5	.0		262.5+
56-57		.0E	M	M	25.0	32.4	57.8	M	22.0	T	.0		M
57-58		10.0	20.4	8.7	40.8	14.8	19.6	15.9	9.9	.0	.0		140.1
58-59		1.0	1.8	59.9	27.9	36.3	38.6	22.7	24.9	3.6	.0		216.7
59-60		T	17.5	49.0	6.5	22.6	22.5	32.5	M	8.0	T		M
1960-61		T	2.0	10.1	14.5	11.5	45.5	21.1	25.0	3.0	.0		132.7
61-62		M	19.0	37.0	41.0	M	M	39.5	M	.0	.0		M
62-63		4.0	.0	22.0	37.0	19.0	2.0	20.0	14.0	T	.0		118.0
63-64		.0	1.0	24.0	23.0	49.0	20.0	44.0	20.0	13.0	.0		194.0
64-65	T	1.0	2.0	19.5	78.5	47.0	40.0	24.0	19.0	T	2.0		233.0
65-66		14.0	.0	25.0	28.0	73.5	20.0	9.0	14.0	T	2.0		185.5
66-67	T	.0	11.0	49.0	18.0	46.0	42.0	26.0	40.0	12.0	T		244.0
67-68		.0	7.0	23.0	32.0	27.0	7.0	15.0	20.0E	3.0	.0		134.0
68-69		8.0	3.0	4.5	72.5	102.0	12.0	13.0	3.0	T	1.0		219.0
69-70		.0	M	9.1	11.2	31.7	29.5	23.5	36.0	6.0	.0		147.0+
1970-71		3.8	7.0	31.0E	36.0	64.5	18.0E	46.0	7.5	1.0	T	T	214.8
71-72		2.0E	13.5	19.5	88.0	106.0	57.0	19.0	13.0	3.0	.0	T	321.0
72-73		12.0	15.0	2.0	28.0	8.0	16.0	11.0	18.5	.5	T		111.0
73-74		T	5.0	49.0	15.4	48.2	36.0	36.0	4.5	6.0	.0		200.1
74-75		2.0	3.0E	18.5	13.5	33.0	50.5	29.5	10.0E	6.0	.0		176.0
75-76		.0	15.0	16.0	14.0	34.0	60.0	9.0E	20.0	1.0	T		169.0
76-77		.0	1.0	11.0	21.0	12.0	2.0	29.0	4.0	3.0	.0		83.0
77-78		.0	4.0	35.0	63.0	55.0	20.0	4.5	8.0	7.0	.5		197.0
78-79		T	10.0	60.0	49.0	15.0	46.0	32.0	40.0	9.0E	1.0		262.0
79-80		.0	8.0	4.5E	42.0	37.0	18.0	33.0	18.0	.0	2.0		162.5
1980-81		3.0	2.0	15.0	54.0	7.0	8.0	5.0	19.0	2.0	.0		115.0
81-82		.0	8.0	13.0	18.0	63.0	18.0	37.0	30.0	12.0	T		199.0
82-83		6.0	2.0	29.0	28.0	25.2	4.5	17.0	3.0	2.0	.0		116.7
83-84		9.0	.0	15.0	21.0	10.0	6.0	17.0E	5.5	3.5	.0		87.0
84-85		16.0	47.0	10.0	66.0	4.0	27.0	30.0	13.0E	T	.0		213.0
85-86		24.0	30.0	29.0	5.0	(Data not available at publication time)							
10-year averages (available years)													
1951-60	T	2.7	12.5	34.3	25.5	29.4	41.7	32.5	25.1	6.1	.2		210.0
1961-70	T	3.0	5.0	22.3	35.6	45.2	24.2	23.5	21.2	3.7	.5		184.2
1971-80		2.0	8.2	24.7	37.0	41.3	32.4	24.9	15.4	3.7	.4	T	190.0

[1] Generally 1 or 2 years missing; January complete.
[2] Adjusted for apparent error.

Table 26.--Frequency distribution of daily snowfall amounts at West Glacier, Polebridge, and Summit; based on years 1949-78

SNOWFALL - PERCENT FREQUENCY OF DAILY AMOUNTS (INCHES)

- GIVEN TO NEAREST TENTH PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 248809 WEST GLACIER 1949-1978

PERIOD BEGINS	TOTAL NUM. DAYS	AMOUNT EQUAL TO OR GREATER THAN 0.5	1	2	4	6	8	10	12	16	20	24
JAN 1	290	490	438	300	145	72	31	21	7	3		
JAN 11	290	507	462	321	138	69	34	14	7	3		
JAN 21	319	461	389	266	119	56	31	13	6	3		
FEB 1	290	328	290	190	103	38	21	17	10	3		
FEB 11	289	367	318	197	66	24	10	3				
FEB 21	239	293	247	172	79	42	21	4	4			
MAR 1	290	300	269	159	52	17	14	7				
MAR 11	290	200	169	72	17	10						
MAR 21	319	172	144	97	38	22	13	6	3			
APR 1	290	52	38	38	21	10						
APR 11	290	55	48	28	14	10	3					
APR 21	290	41	38	17	3							
MAY 1	290	34	31	21	3							
MAY 11	290											
MAY 21	319											
JUN 1	290	3	3	3	3	3	3					
JUN 11	290											
JUN 21	290	3	3									
JUL 1	290											
JUL 11	290											
JUL 21	319											
AUG 1	290											
AUG 11	290											
AUG 21	319											
SEP 1	280											
SEP 11	280	4	4	4								
SEP 21	278	7	7	4								
OCT 1	289	7	7									
OCT 11	290	21	21	7	3	3	3	3	3			
OCT 21	312	67	67	26	10	3	3					
NOV 1	290	107	97	62	28	21	3					
NOV 11	290	241	203	138	52	28	10	7	3			
NOV 21	290	279	248	159	62	31	14	7	3			
DEC 1	299	398	348	258	110	43	30	7				
DEC 11	300	420	393	250	130	50	20	10	3			
DEC 21	330	482	412	273	130	61	18	6	3	3		
MONTH												
JAN	899	485	428	295	133	66	32	16	7	3		
FEB	818	331	287	187	83	34	17	9	5	1		
MAR	899	222	192	109	36	17	9	4	1			
APR	870	49	41	28	13	7	1					
MAY	899	11	10	7	1							
JUN	870	2	2	1	1	1	1					
JUL	899											
AUG	899											
SEP	838	4	4	2								
OCT	891	33	33	11	4	2	2	1	1			
NOV	870	209	183	120	47	26	9	5	2			
DEC	929	435	385	260	124	52	23	8	2	1		

(con.)

Table 26. (Con.)

SNOWFALL - PERCENT FREQUENCY OF DAILY AMOUNTS (INCHES)

- GIVEN TO NEAREST TENTH PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 246615 POLEBRIDGE 1949-1978

PERIOD BEGINS	TOTAL NUM. DAYS	AMOUNT EQUAL TO OR GREATER THAN 0.5	1	2	4	6	8	10	12	16	20	24
JAN 1	290	397	314	217	117	79	34	17	10	3		
JAN 11	290	393	331	224	121	62	38	21	7	7	3	
JAN 21	319	373	310	197	75	34	16	13	3			
FEB 1	290	272	231	155	66	41	28	14	3			
FEB 11	290	263	231	169	72	41	21	10	3			
FEB 21	237	228	177	105	25	17	8					
MAR 1	290	269	214	114	48	24	10	3				
MAR 11	290	145	121	55	34	3						
MAR 21	319	132	119	72	19	6	6	3	3	3		
APR 1	280	61	43	21	11							
APR 11	280	75	64	29	11	4	4					
APR 21	280	57	43	25	4							
MAY 1	286	28	21	17	3	3						
MAY 11	290	14	14									
MAY 21	317	6	6	3								
JUN 1	299	3	3	3	3	3	3					
JUN 11	299											
JUN 21	300	3	3	3	3							
JUL 1	290											
JUL 11	290											
JUL 21	319											
AUG 1	300											
AUG 11	300											
AUG 21	330											
SEP 1	299											
SEP 11	299	7	3	3								
SEP 21	298	7	7	3								
OCT 1	280	21	21	14	7	7	4					
OCT 11	277	22	22	14	11	4						
OCT 21	307	91	75	46	20	7						
NOV 1	270	107	85	63	30	4	4	4				
NOV 11	270	181	159	107	56	30	7					
NOV 21	270	252	219	148	70	30	19	7	4	4		
DEC 1	300	317	273	170	80	37	27	10	3			
DEC 11	300	340	270	147	57	27	17	10	7	3		
DEC 21	329	340	267	170	88	43	15	9	6			
MONTH												
JAN	899	387	318	212	103	58	29	17	7	3	1	
FEB	817	263	215	146	56	34	20	9	2			
MAR	899	180	150	80	33	11	6	2	1	1		
APR	840	64	50	25	8	1	1					
MAY	893	16	13	7	1	1						
JUN	898	2	2	2	2	1	1					
JUL	899											
AUG	930											
SEP	896	4	3	2								
OCT	864	46	41	25	13	6	1					
NOV	810	180	154	106	52	21	10	4	1	1		
DEC	929	333	270	163	75	36	19	10	5	1		

(con.)

Table 26. (Con.)

SNOWFALL - PERCENT FREQUENCY OF DAILY AMOUNTS (INCHES)

- GIVEN TO NEAREST TENTH PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 247978 SUMMIT 1949-1978

PERIOD BEGINS	TOTAL NUM. DAYS	AMOUNT EQUAL TO OR GREATER THAN 0.5	1	2	4	6	8	10	12	16	20	24
JAN 1	249	558	518	353	193	96	72	44	32	24	12	
JAN 11	242	550	492	351	169	95	50	37	17	8	4	4
JAN 21	264	473	409	277	125	72	49	30	27	8	4	
FEB 1	269	416	398	253	138	74	33	19	7	4		
FEB 11	262	469	416	279	137	76	46	34	23	8	4	
FEB 21	215	365	329	205	128	73	46	18	14			
MAR 1	279	444	416	262	122	43	18	7	7			
MAR 11	275	378	320	193	65	22	4	4				
MAR 21	306	353	314	219	105	52	23	20	13	10		
APR 1	290	255	228	141	66	41	31	17	10	3		
APR 11	290	259	248	166	66	28	21	17	14	7		
APR 21	289	277	246	152	80	55	31	21	17	14		
MAY 1	290	141	121	72	34	14	7	3	3	3		
MAY 11	290	110	93	59	28	10	3	3	3	3		
MAY 21	319	41	34	34	22	6	3					
JUN 1	300	17	17	13	10	7	7	3				
JUN 11	300	3	3	3								
JUN 21	300	7	7	7								
JUL 1	300											
JUL 11	300	3	3	3	3							
JUL 21	329											
AUG 1	300											
AUG 11	300											
AUG 21	330	3										
SEP 1	298	27	20	13	7							
SEP 11	298	64	47	30	20	13	7	3	3			
SEP 21	297	71	67	61	27	17	7	3				
OCT 1	266	109	98	53	23	4	4	4				
OCT 11	264	136	121	83	34							
OCT 21	283	194	163	106	49	21	11	7	4	4	4	4
NOV 1	250	232	208	164	64	28	16	16				
NOV 11	249	418	369	233	108	56	16	8	4	4		
NOV 21	249	462	434	297	129	80	36	20	16	4	4	
DEC 1	250	472	432	292	144	60	32	28	16	4		
DEC 11	250	436	412	288	128	64	24	16	16			
DEC 21	275	535	491	371	182	105	65	40	18	4		
MONTH												
JAN	755	526	472	326	162	87	57	37	25	13	7	1
FEB	750	420	384	248	135	75	41	24	15	4	1	
MAR	860	391	349	224	98	40	15	10	7	3		
APR	869	264	241	153	70	41	28	18	14	8		
MAY	899	96	81	55	28	10	4	2	2	2		
JUN	900	9	9	8	3	2	2	1				
JUL	929	1	1	1	1							
AUG	930	1										
SEP	893	54	45	35	18	10	4	2	1			
OCT	813	148	128	81	36	9	5	4	1	1	1	1
NOV	748	370	337	231	100	55	23	15	7	3	1	
DEC	775	483	446	319	152	77	41	28	17	3		

Table 27.--Snowpack data. Average (Avg.) snow depth (SN), water content (WC), and density (DS, equal to WC/SN) on about first day of month, at snow-survey courses in or near Glacier National Park; based on or adjusted to 30-year period 1951-80. SN and WC are in inches. Maximum (Max.) and minimum (Min.) values observed during 1941-85, except as noted. A denotes averages adjusted from short record, 8 to 14 years of data; E, estimated value; dotted line, data unavailable. Letters in parentheses are snow course identifiers used in figure 2

Name of course, elevation, ft		Jan.1 SN	Jan.1 WC	Jan.1 DS	Feb.1 SN	Feb.1 WC	Feb.1 DS	Mar.1 SN	Mar.1 WC	Mar.1 DS	Apr. 1 SN	Apr. 1 WC	Apr. 1 DS	May 1 SN	May 1 WC	May 1 DS
Cattle Queen 4,700 (CQ)	Avg.	.....	.....	.....	.....	.....	.....	87	27.0	0.31	87	30.5	0.35	.....	.....	.....
Desert Mtn. 5,600 (DM)	Avg.	28	6.7	0.25	40	11.0	0.28	47	14.2	0.31	48	16.7	0.35	35	14.2	0.40
	Max.	50E	12.8E		55	17.2		66	21.7		70	23.3		51	22.8	
	Min.	15	2.7		21	5.2		27	7.0		22	7.4		0	.0	
Emery Creek 4,350	Avg. A	30	7.3	0.24	45	12.2	0.27	49	15.4	0.31	46	16.4	0.35	23	9.5	0.41
Flattop Mtn.[1] 6,300	Avg. A		23.0			34.0			42.0			49.0			53.0	
	Max.		28.0			45.0						70.0			74.0	
Hell Roaring Div.[2] 5,770 (HR)	Avg.	52	14.4	0.28	72	22.9	0.32	82	28.0	0.34	86	32.8	0.38	72	32.0	0.44
	Max.	78	22.2		105	34.9		115	43.3		116	48.6		102	48.0	
	Min.	28	5.8		38	10.5		57	15.5		60	18.8		35	13.1	
Hudson Bay Div. 5,800 (HB)	Avg. A	.....	.....	.....	.....	.....	.....	50	15.8	0.32	54	18.2	0.34	50	19.0	0.38
Iceberg Lake 5,600 (IB)	Avg.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	69	31.8 (21.9)[3]	0.47
	Max.													116	52.6	
	Min.													10	2.1	
Josephine Lower 4,900 (JL)	Avg.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	44	17.9	0.39
Kishenehn 3,890 (KS) (extremes 1951-85)	Avg.	.....	.....	.....	.....	.....	.....	33	8.8	0.27	29	8.9	0.30	.....	.....	.....
	Max.							54	15.7		67	18.3				
	Min.							9	1.4		8	1.4				
Many Glacier 4,900	Avg.[4] A	.....	.....	.....	52	14.7	0.28	61	19.0	0.31	63	22.0	0.35	41	17.0	0.41
Marias Pass 5,250 (MP)	Avg.	30	7.4	0.25	45	12.4	0.28	53	16.5	0.31	55	19.1	0.35	44	17.3	0.40
	Max.	58	15.1		76	21.5		77	26.8		84	31.1		94	34.6	
	Min.	13	2.8		14	3.4		18	4.3		16	6.3		0	.0	
Mineral Creek 4,000 (MN)	Avg.	.....	.....	.....	.....	.....	.....	60	18.1	0.30	57	20.3	0.36	31	12.8	0.42
Mount Allen 5,700 (MA)	Avg.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	106	48.1 (39.3)[3]	0.46
	Max.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	169	72.9	
	Min.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39	16.5	
Piegan Pass 5,500 (PG)	Avg.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89	41.1 (31.2)[3]	0.46
	Max.													146	65.8	
	Min.													13	5.7	
Ptarmigan 5,800 (PT)	Avg.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	88	40.1	0.46
	Max.													137	63.7	
	Min.													19	5.7	

[1]Data from snow pillow; WC only.
[2]January and February data are based on period beginning 1964. March extremes are for 1951-85; April and May extremes for 1942-85.
[3]Number in parentheses is 1922-50 average WC; average SN was about 20 inches below 1951-80 value.
[4]Insufficient data for January 1. WC from snow pillow averages about 10 percent less than values shown; larger difference on May 1.

Table 28.--Monthly average temperatures based on 24-hour periods ending at indicated observation times (m.s.t.)[1]; based on or adjusted to 30-year normal period, 1951-80. Stations in Montana except as noted in Alberta (AB). Blanks denote insufficient data

Station, Observ. time		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
		°F												
Babb 6NE 6 p.m.	Max.	28.7	35.7	38.9	49.4	60.1	67.6	75.8	74.6	65.9	56.3	42.0	34.3	52.4
	Min.	4.8	11.9	15.7	25.8	34.2	40.1	43.5	42.7	36.0	29.9	19.3	11.8	26.3
	Mean	16.8	23.8	27.3	37.6	47.2	53.9	59.7	58.7	51.0	43.1	30.7	23.1	39.4
Browning 5 p.m. (midnight beg. 1977)	Max.	26.4	33.4	37.4	48.9	59.9	67.8	77.2	75.6	66.4	55.7	39.8	31.9	51.7
	Min.	6.9	14.1	17.5	27.4	36.2	42.9	47.2	46.1	39.3	32.8	21.2	14.3	28.8
	Mean	16.7	23.8	27.5	38.2	48.1	55.4	62.2	60.9	52.9	44.3	30.5	23.1	40.3
Caldwell, AB	Max.	24.8	32.9	36.1	46.8	58.6	66.0	73.9	71.6	63.0	53.1	39.0	31.5	49.8
	Min.	6.3	15.3	17.8	27.3	36.7	43.5	48.0	46.2	40.1	33.4	21.9	14.4	29.2
	Mean	15.6	24.1	27.0	37.1	47.7	54.8	61.0	58.9	51.6	43.3	30.5	23.0	39.5
Carway, AB	Max.	26.2	32.7	35.4	46.6	57.9	65.1	73.4	72.0	63.0	53.6	39.7	32.2	49.8
	Min.	6.1	13.3	16.2	26.6	36.0	42.3	46.8	46.0	38.8	31.8	20.1	12.7	28.1
	Mean	16.2	23.0	25.8	36.6	47.0	53.7	60.1	59.0	50.9	42.7	29.9	22.5	39.0
Essex 5 p.m.	Max.	26.4	34.0	40.2	50.2	62.5	71.3	81.2	79.0	66.5	52.5	36.1	29.4	52.4
	Min.	11.5	17.0	19.5	27.6	34.2	41.0	45.2	44.3	37.3	29.8	21.9	16.8	28.9
	Mean	19.0	25.5	29.9	38.8	48.4	56.2	63.2	61.7	51.9	41.2	29.0	23.1	40.7
Hungry Horse Dam, 9 a.m.[2]	Max.	27.7	35.2	41.1	51.3	62.8	70.7	80.0	78.3	65.9	52.7	37.6	32.6	53.0
	Min.	14.7	18.9	21.7	30.7	39.1	45.5	49.4	48.6	40.7	33.0	25.4	20.5	32.4
	Mean	21.2	27.1	31.4	41.0	51.0	58.1	64.7	63.5	53.3	42.9	31.5	26.6	42.7
Kalispell AP Midnight	Max.	27.4	35.0	42.1	54.6	64.8	72.1	82.1	80.3	69.2	55.3	39.0	31.5	54.4
	Min.	11.2	17.5	21.6	30.5	38.1	44.5	47.9	46.7	38.6	29.6	22.7	16.9	30.5
	Mean	19.3	26.3	31.9	42.6	51.5	58.3	65.0	63.5	53.9	42.5	30.9	24.2	42.5
Many Glacier (near hotel) 6-7 p.m.	Max.	25.5	31.5	34.3	43.8	54.6	62.5	71.0	69.7	59.6	49.7	35.7	30.0	47.3
	Min.	7.4	15.3	17.9	27.4	35.2	41.6	47.3	46.5	39.0	32.4	21.4	14.3	28.8
	Mean	16.5	23.4	26.1	35.6	44.9	52.1	59.2	58.1	49.3	41.1	28.6	22.2	38.1
Many Glacier Ranger Stn. 5 p.m.	Max.							73.5	72.0	61.7				
	Min.							42.5	41.6	36.3				
	Mean							58.0	56.8	49.0				
Polebridge 5 p.m. (7 a.m. beg. 1975)	Max.	27.4	36.2	41.7	52.3	63.5	71.1	80.2	78.8	68.7	54.8	37.9	30.4	53.6
	Min.	6.8	12.7	16.2	25.2	32.1	38.5	40.8	39.1	33.0	25.9	18.9	12.3	25.1
	Mean	17.1	24.5	29.0	38.8	47.8	54.8	60.5	59.0	50.9	40.4	28.4	21.4	39.4
Summit 5 p.m. (varied)	Max.	22.7	29.6	33.7	44.1	55.2	63.7	72.6	70.9	60.3	48.5	33.1	26.5	46.7
	Min.	6.5	13.0	14.4	23.2	30.6	37.3	41.0	39.9	34.3	28.6	18.8	12.6	25.0
	Mean	14.6	21.3	24.1	33.7	42.9	50.5	56.8	55.4	47.3	38.6	26.0	19.6	35.9
UCSL[3] Hqtrs. (Stn. 1B) Midnight	Max.	21.8	29.4	34.6	44.5	54.5	63.1	72.2	69.8	59.0	46.9	31.5	25.6	46.1
	Min.	5.9	12.8	15.5	23.8	30.8	37.6	43.2	42.2	35.5	28.7	18.2	12.1	25.5
	Mean	13.9	21.1	25.1	34.2	42.7	50.4	57.7	56.0	47.3	37.8	24.9	18.9	35.8
UCSL Stn. 10 Midnight[4]	Max.	20.0	25.9	29.7	38.6	48.0	56.5	65.5	63.2	52.7	42.2	28.2	23.2	41.1
	Min.	8.7	12.5	14.0	21.6	29.4	36.3	46.0	45.0	36.6	28.1	17.5	14.0	25.8
	Mean	14.4	19.2	21.9	30.1	38.7	46.4	55.8	54.1	44.7	35.2	22.9	18.6	33.5
Waterton Park, Cameron Falls, AB[5]	Max.	25.1	31.9	35.0	45.2	56.8	64.6	72.4	70.3	60.4	51.0	37.6	31.0	48.4
	Min.	8.8	15.0	17.5	28.0	36.5	43.4	48.4	47.5	40.6	34.3	23.1	16.3	29.9
	Mean	17.0	23.5	26.3	36.6	46.7	54.0	60.4	58.9	50.5	42.7	30.4	23.7	39.2
Cameron Lake,[6] Waterton NP	Max.	18.8	26.8	29.8	39.7	49.8	59.3	68.9	66.6	56.8	46.0	31.6	24.3	43.2
	Min.	4.4	10.8	13.1	22.8	30.9	37.9	42.8	42.3	35.5	29.8	19.0	11.7	25.1
	Mean	11.6	18.8	21.5	31.3	40.4	48.6	55.9	54.0	46.2	37.9	25.3	18.0	34.2
Waterton River Cabin, AB	Max.	27.0	33.6	36.3	47.1	58.3	65.7	73.8	72.0	62.6	53.4	39.7	33.1	50.2
	Min.	6.4	13.3	16.3	27.0	36.0	42.4	45.7	44.4	38.1	32.7	21.4	14.2	28.2
	Mean	16.7	23.5	26.3	37.1	47.2	54.1	59.8	58.2	50.4	43.1	30.6	23.7	39.2
West Glacier 5 p.m.	Max.	27.6	34.8	41.0	52.1	63.7	70.9	79.6	77.6	66.4	52.9	37.5	30.8	52.9
	Min.	13.4	18.9	21.6	29.1	36.5	43.2	46.6	45.8	38.8	31.7	24.4	19.0	30.7
	Mean	20.5	26.9	31.3	40.6	50.1	57.1	63.1	61.7	52.6	42.3	31.0	25.0	41.8

[1] At Canadian stations, 24-hour maximum temperature is read in morning; minimum, about 5 or 6 p.m.
[2] Observation time beginning in 1968; normals estimated from 1968-82 data comparisons.
[3] Former Upper Columbia Snow Laboratory, near Marias Pass.
[4] Based on data from hygrothermograph; 1.0 degree added to average maximum and 1.0 degree subtracted from average minimum--as overall correction for typical instrument lag.
[5] At townsite, about one-fourth mile from former Headquarters Station.
[6] Based on data from hygrothermograph; no adjustment for possible instrument lag.

Table 29.--Monthly average daily maximum and minimum temperatures by individual years; based on 24-hour period ending at indicated observation time (m.s.t.). Some averages, particularly at Polebridge and Summit, may differ from originally published values; estimates have been made for missing days and a few apparent errors corrected. E denotes average estimated in whole or in large part (more than 10 days data were missing). M denotes missing, no estimate made

West Glacier - Observation time 5 p.m.

Year		Average daily maximum and minimum temperatures												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
		°F												
1931	Max.	35.0	35.8	43.8	57.5	67.5	74.0	81.4	82.5	65.3	56.2	35.9	32.7	55.6
	Min.	20.9	18.3	22.0	28.2	36.5	44.1	45.7	42.9	40.4	28.9	19.4	17.7	30.4
1932		27.2	33.3	36.2	53.4	65.5	73.1	81.2	80.0	69.3	51.0	41.0	26.8	53.2
		13.4	14.4	17.7	29.2	36.0	44.1	44.9	46.4	35.0	31.9	26.9	10.5	29.2
1933		30.9	26.1	42.9	52.9	60.9	75.7	82.6	80.3	62.3	54.4	43.8	35.6	54.0
		11.3	11.0	25.2	28.8	34.9	42.3	45.0	43.9	38.1	32.3	29.0	22.6	30.4
1934		37.0	38.8	46.7	63.8	70.7	71.3	82.3	83.1	63.1	55.2	42.3	33.0	57.3
		24.0	20.9	26.7	32.6	40.2	43.9	47.6	44.9	37.5	34.5	32.1	22.2	33.9
1935		27.6	34.7	38.9	48.7	63.7	71.5	80.3	78.4	71.2	54.3	34.9	31.3	53.0
		13.4	15.0	21.0	22.7	33.4	41.0	46.8	42.9	38.5	28.5	19.5	22.5	28.8
1936		31.0	15.1	40.2	54.6	71.9	74.8	87.3	82.3	66.6	57.8	34.6	32.0	54.0
		19.9	-7.5	20.8	26.6	40.3	46.8	50.0	46.9	39.6	30.9	17.9	20.4	29.4
1937		9.2	29.7	42.9	51.0	66.4	71.4	80.3	73.8	68.8	52.8	37.4	30.2	51.2
		-7.0	11.9	22.2	31.3	37.6	44.3	49.6	46.0	41.5	36.6	27.2	21.3	30.2
1938		29.4	30.2	40.8	53.5	60.3	70.9	77.3	75.3	75.2	55.8	35.6	32.5	53.1
		18.5	14.3	26.6	31.0	38.3	45.9	50.2	45.7	43.0	35.7	23.5	20.1	32.7
1939		34.7	28.1	43.4	58.2	67.3	66.6	82.0	82.4	69.5	56.5	42.9	37.0	55.7
		23.6	11.5	22.5	32.0	39.0	43.4	48.3	44.3	41.2	32.8	25.3	24.3	32.4
1940		28.4	35.3	47.8	54.8	69.7	76.8	82.9	83.3	72.5	55.3	32.0	32.4	55.9
		13.8	23.6	29.5	32.9	39.2	45.0	50.3	44.9	47.1	37.6	17.7	23.1	29.5
1941		31.3	38.6	49.7	61.0	64.6	72.7	83.4	78.8	57.8	51.5	42.3	33.8	55.5
		18.5	18.6	24.0	31.2	39.8	46.3	51.3	48.9	40.1	31.8	27.8	21.7	33.3
1942		26.3	32.2	44.4	59.1	61.6	65.2	81.3	80.6	68.8	56.3	36.3	34.1	53.9
		12.5	16.0	24.3	30.7	37.6	45.1	48.6	47.1	41.0	33.2	21.8	22.2	31.7
1943		21.2	37.0	36.4	58.8	59.9	65.2	79.5	79.1	72.0	56.6	39.8	29.6	52.9
		7.5	17.4	12.7	32.0	35.7	41.0	46.6	45.0	37.7	33.9	26.2	19.7	29.6
1944		31.9	34.3	39.2	59.1	66.8	70.8	80.8	77.4	70.4	61.3	39.1	28.5	55.0
		16.0	18.1	18.5	30.0	38.9	45.5	46.2	44.5	40.1	31.8	28.7	17.0	31.3
1945		33.4	36.6	42.3	48.9	65.4	68.2	83.4	84.5	63.2	56.0	36.1	30.9	54.1
		21.2	20.1	23.4	28.9	37.5	43.5	47.5	45.9	38.8	32.8	24.2	21.3	32.1
1946		33.6	35.9	45.5	56.1	64.5	69.1	81.5	79.2	64.7	46.7	33.1	30.8	53.4
		21.0	22.9	27.5	31.2	36.1	42.2	47.3	45.5	39.6	30.3	19.9	16.7	31.7
1947		27.7	35.6	43.2	55.8	67.5	65.5	83.3	76.9	64.5	53.7	35.8	34.0	53.6
		13.3	14.6	22.4	31.0	38.7	44.2	47.2	45.5	41.9	38.4	24.9	21.1	31.9
1948		32.2	31.0	37.7	51.6	63.2	72.4	74.6	75.4	68.6	54.0	41.1	25.1	52.2
		15.8	13.4	15.9	29.6	39.5	47.1	45.4	46.2	37.8	27.7	31.2	10.5	30.0
1949		16.3	287.7	40.7	58.7	67.6	71.0	78.4	81.4	68.3	48.3	42.7	31.0	52.8
		-5.2	9.3	17.5	29.8	37.3	41.5	46.6	44.7	37.1	30.1	29.4	15.6	27.8
1950		13.9	34.6	37.6	48.6	61.3	68.5	78.5	77.3	68.1	52.5	37.1	33.7	51.0
		-4.2	17.5	21.7	28.8	34.5	41.7	47.4	45.5	37.3	34.7	23.0	23.8	29.3
1951		26.3	33.1	35.1	55.0	63.0	65.4	80.4	74.8	61.1	45.6	35.5	23.1	49.9
		11.0	13.6	13.9	24.0	35.2	39.8	46.4	45.4	36.6	33.1	23.8	10.3	27.8
1952		25.4	35.3	41.5	60.0	64.7	69.0	77.5	77.8	71.6	60.9	38.8	31.6	54.5
		11.1	19.4	20.5	27.9	38.1	43.8	45.2	46.0	39.7	30.4	23.8	22.7	30.7
1953		37.0	36.8	44.5	48.6	62.4	67.3	82.1	78.8	70.2	59.8	42.1	34.7	55.4
		27.1	23.3	25.3	28.9	35.3	42.9	45.6	45.9	39.6	30.9	28.5	24.2	33.1
1954		27.4	39.7	37.6	44.8	64.5	64.7	78.9	72.9	63.3	50.0	42.5	32.8	51.6
		11.7	23.9	16.1	26.7	36.2	41.9	45.8	46.0	40.0	30.0	31.4	22.7	31.0
1955		31.2	29.4	33.0	46.2	58.4	72.2	74.2	80.6	66.2	51.8	28.6	28.8	50.1
		20.1	14.0	14.0	28.5	33.8	43.4	48.3	42.1	38.0	33.5	15.6	14.5	28.8
1956		28.9	29.4	39.6	52.5	64.8	71.3	80.1	76.4	67.7	50.3	36.3	33.0	52.5
		16.4	12.8	21.9	27.3	37.4	42.6	48.3	46.0	39.9	34.5	24.7	19.0	30.9
1957		17.5	32.3	41.5	51.9	68.3	70.3	79.7	76.2	70.9	47.9	38.2	35.8	52.5
		1.0	13.3	21.1	29.4	39.7	44.7	46.1	45.4	37.0	31.2	23.8	24.6	29.8
1958		32.5	35.4	41.6	51.4	74.6	71.7	77.5	83.5	66.6	54.3	36.3	32.6	54.8
		21.7	22.1	22.2	31.3	40.3	46.5	48.4	49.5	39.9	30.5	23.6	22.2	33.2
1959		28.6	29.7	42.4	53.5	58.9	71.3	81.4	73.4	59.8	49.3	32.5	32.9	51.1
		15.9	14.7	25.8	29.4	33.9	42.6	44.1	43.9	41.0	32.3	15.7	18.9	29.9
1960		25.9	32.9	41.1	51.8	60.6	71.3	84.4	70.2	67.8	53.1	35.4	27.3	51.8
		10.7	15.0	19.8	29.3	35.3	42.2	47.8	45.5	38.0	32.4	25.0	18.5	30.0

(con.)

Year	Average daily maximum and minimum temperatures												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	°F												
1961	31.2	37.9	43.0	47.3	61.9	79.7	81.1	84.6	59.7	49.7	34.1	28.6	53.2
	18.4	27.7	26.2	30.1	38.2	45.4	48.5	48.1	35.3	30.5	19.7	16.1	32.0
1962	26.8	32.5	39.9	57.2	60.6	72.7	77.4	75.5	67.7	53.0	41.4	35.7	53.4
	9.6	16.4	19.3	29.4	38.0	41.4	45.2	45.7	36.7	34.6	30.7	25.4	31.0
1963	19.3	40.1	45.1	54.3	63.9	69.5	77.5	79.3	71.7	56.9	40.4	29.7	54.0
	3.6	23.1	25.3	30.5	35.4	45.0	45.9	47.1	42.6	35.1	27.3	17.7	31.6
1964	32.4	36.0	37.3	49.3	61.4	67.3	78.7	70.2	60.3	52.7	38.0	26.3	50.9
	22.5	19.4	20.2	28.9	36.2	43.4	46.7	43.1	37.4	35.7	25.1	14.2	30.7
1965	32.9	34.6	37.1	53.3	61.3	68.2	79.5	76.3	53.9	57.7	40.5	33.9	52.5
	24.0	18.7	12.9	29.7	34.4	42.1	43.9	47.3	34.6	34.8	27.9	22.1	31.0
1966	30.3	35.1	43.2	51.9	68.9	68.3	80.1	78.5	75.0	52.4	37.4	33.0	54.7
	17.1	16.3	21.1	28.6	36.0	42.3	44.6	42.5	42.0	31.9	24.2	23.6	30.8
1967	33.7	38.1	38.0	48.5	63.5	72.8	84.9	87.4	80.1	54.6	38.0	28.0	55.6
	22.6	23.2	20.6	27.3	36.1	43.1	45.8	46.1	43.3	32.4	25.3	17.0	31.9
1968	29.7	39.2	49.2	51.4	64.0	70.4	80.9	72.6	63.3	49.8	38.7	24.9	52.8
	15.2	21.6	28.5	29.2	34.6	44.4	46.6	45.6	41.0	32.2	26.7	11.1	31.4
1969	19.4	34.1	43.0	57.0	66.8	71.3	78.3	82.2	68.4	47.0	41.3	32.0	53.4
	5.3	14.3	20.5	30.8	36.7	43.7	44.8	42.9	40.8	30.5	26.7	22.4	30.0
1970	28.1	35.9	39.8	46.1	66.2	76.6	80.2	82.0	61.7	49.0	37.0	30.1	52.7
	15.9	22.7	21.7	29.2	36.5	46.4	47.4	42.9	34.0	27.7	23.1	17.9	30.3
1971	28.1	35.4	38.5	53.4	67.0	68.1	78.1	85.2	62.6	50.2	37.8	27.4	52.7
	14.6	19.7	22.2	28.5	37.3	41.2	45.1	48.1	36.0	30.5	25.7	12.7	30.1
1972	24.4	33.4	44.9	49.2	63.2	72.5	74.6	82.4	62.5	50.9	38.4	25.3	51.8
	6.8	19.9	27.4	28.2	37.0	44.8	45.7	46.4	36.3	28.3	26.7	12.5	30.0
1973	27.2	35.7	45.6	52.9	66.7	71.2	84.1	85.2	68.8	53.3	34.1	32.4	54.7
	10.1	15.2	25.6	29.2	35.1	43.9	45.4	44.6	39.4	34.1	23.5	23.8	30.8
1974	27.7	37.0	40.8	52.8	57.9	76.8	80.1	77.5	70.7	60.3	39.1	34.3	54.6
	14.0	24.0	23.1	32.3	36.0	44.4	47.4	45.2	36.0	28.5	26.2	23.8	31.7
1975	29.5	28.8	37.4	46.1	60.6	67.3	84.5	71.3	67.1	48.0	36.5	34.0	50.9
	14.0	10.5	20.3	25.9	35.0	41.3	51.0	47.0	37.8	33.6	23.1	22.6	30.1
1976	32.1	36.2	39.8	53.4	68.0	66.5	78.8	73.5	68.8	54.3	39.8	35.0	53.9
	18.9	21.8	19.8	29.8	35.9	42.2	47.2	48.4	39.8	32.0	24.2	22.2	31.9
1977	27.2	39.3	41.2	59.7	61.2	76.5	76.6	74.1	61.9	52.9	35.4	27.1	52.8
	13.6	23.2	25.7	29.1	37.6	43.9	47.9	48.1	38.7	31.1	22.6	13.1	31.2
1978	29.0	34.5	45.5	53.2	57.1	73.7	77.0	71.5	64.3	56.2	33.5	25.2	51.7
	12.8	20.0	24.6	31.9	37.6	43.4	48.7	45.9	42.6	28.8	18.7	9.1	30.3
1979	15.0	31.2	43.7	51.8E	64.2	74.3	81.3	81.6	72.3	57.7	36.1	36.3	53.8
	-7.9	16.6	22.0	30.5E	37.1	42.7	48.1	48.4	39.2	31.2	22.2	24.1	29.5
1980	24.0	34.1	39.1	59.4	67.2	70.0	76.8	71.6	64.6	57.3	40.0	32.2	53.1
	4.9	19.8	21.8	32.0	40.3	41.9	47.0	43.6	40.8	31.3	26.7	19.8	30.6
1981	34.2	35.6	48.5	53.4	63.2	64.5	77.3	82.7	69.1	52.7	42.0	31.2	54.5
	21.6	20.4	24.6	32.5	40.5	42.2	47.4	48.1	38.8	31.3	26.1	18.1	32.6
1982	26.2	31.4	42.5	48.7	62.1	73.5	75.0	78.0	66.2	50.5	33.4	30.4	51.5
	11.0	13.7	26.4	25.5	34.1	45.2	46.8	47.0	40.5	33.6	23.4	17.5	30.4
1983	34.8	38.8	44.0	53.8	66.2	69.9	73.2	80.5	64.7	53.6	39.1	18.7	53.1
	22.6	25.6	28.9	28.7	38.7	44.4	47.8	49.9	36.4	33.0	30.0	4.3	32.5
1984	32.7	38.7	42.9	53.2	58.7	69.6	82.0	80.6	60.9	47.8	35.8	25.8	52.4
	22.3	23.4	29.2	31.6	37.3	43.1	47.2	47.7	37.2	28.9	26.0	12.2	32.2
1985	25.0	28.6	41.4	53.9	68.3	73.1	88.1	74.7	58.0	48.0	23.6	26.6	50.8
	14.5	13.0	20.1	32.0	37.8	42.2	50.1	45.5	38.1	31.4	10.9	16.3	29.3
10-year averages													
1931-40	29.0	30.7	42.4	54.8	66.4	72.6	81.8	80.1	68.4	54.9	38.0	32.4	54.3
	15.2	13.3	23.4	29.5	37.5	44.1	47.8	44.9	40.2	33.0	23.9	20.5	31.1
1941-50	26.8	34.5	41.7	55.8	64.2	68.9	80.5	79.1	66.6	53.7	38.3	31.2	53.4
	11.6	16.8	20.8	30.3	37.6	43.8	47.4	45.9	39.1	32.5	25.7	19.0	30.9
1951-60	28.1	33.4	39.8	51.6	64.0	69.5	79.6	76.5	66.5	52.3	36.6	31.3	52.4
	14.7	17.2	20.1	28.3	36.5	43.0	46.6	45.6	39.0	31.9	23.6	19.8	30.5
1961-70	28.4	36.4	41.6	51.6	63.9	71.7	79.9	78.9	66.2	52.3	38.7	30.2	53.3
	15.4	20.3	21.6	29.4	36.2	43.7	45.9	45.1	38.8	32.1	25.7	18.8	31.1
1971-80	26.4	34.6	41.7	53.2	63.3	71.7	79.2	77.4	66.4	54.1	37.1	30.9	53.0
	10.2	19.1	23.3	29.7	36.9	43.0	47.3	46.6	38.7	30.9	24.0	18.4	30.7

(con.)

Table 29. (Con.)

Polebridge - Observation time 5 p.m., changed to 7 a.m. beginning April 1975

Year		Average daily maximum and minimum temperatures												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
		°F												
1948	Max.	32.7	31.5	38.3	51.5	62.8	72.7	75.4	74.8	69.4	58.3	36.1	23.9	52.3
	Min.	7.3	6.0	8.9	26.2	36.3	45.3	39.4	42.4	30.8	22.3	21.8	0.9	24.0
1949		16.4	29.8	42.2	59.1	68.0	70.6	77.2	80.7	70.1	49.9	44.8	28.5	53.1
		-13.8	1.7	13.6	26.0	33.8	37.4	42.3	38.1	31.5	25.5	25.6	9.4	22.6
1950		13.3	36.2	37.7	49.1	61.2	70.0	79.1	78.7	71.0	51.7	36.8	34.6	51.6
		-11.4	13.0	17.1	24.7	30.3	37.4	40.8	39.1	29.8	31.8	17.5	20.7	24.2
1951		26.6	35.8	36.4	55.3	63.7	66.3	80.3	75.2	63.9	46.8	36.1	21.1	50.6
		3.5	6.6	7.9	19.5	32.5	35.0	40.6	38.8	33.0	29.8	18.0	1.4	22.2
1952		25.9	36.8	41.0	59.9	64.9	69.5	79.2	78.9	75.3	63.6	38.1	31.2	55.4
		5.5	11.9	13.8	23.7	32.6	38.6	39.4	38.1	31.9	21.6	16.3	17.5	24.2
1953		37.0	37.7	44.8	48.5	62.9	67.5	82.5	79.8	72.1	62.7	43.4	33.5	56.0
		23.7	15.2	19.4	24.6	31.4	38.1	38.2	39.9	32.7	24.8	24.5	16.6	27.4
1954		26.1	41.7	39.2	44.7	64.2	65.7	79.6	74.3	63.8	52.5	44.7	32.0	52.4
		5.1	18.0	7.9	22.5	31.1	37.7	39.9	40.9	35.5	24.6	27.0	17.2	25.6
1955		29.0	30.1	33.7	46.5	58.3	73.3	75.7	81.9	68.0	55.0	28.5	27.5	50.6
		13.6	7.5	7.7	25.1	30.8	36.5	43.9	33.7	30.8	30.6	10.8	5.7	23.1
1956		30.1	30.9	40.2	53.0	65.2	71.3	80.8	78.6	69.9	50.6	36.1	33.9	53.4
		10.7	5.2	16.2	23.0	33.0	38.1	42.5	38.8	32.8	28.5	17.1	12.1	24.8
1957		16.2	32.8	42.2	51.5	68.7	70.9	79.0	77.0	72.9	47.4	38.8	35.5	52.7
		-8.9	8.5	15.6	25.7	34.2	40.8	40.1	36.3	30.5	27.1	17.2	17.5	23.7
1958		33.8	38.0	41.8	51.4	75.0	72.7	79.1	85.6	68.5	56.5	35.3	32.6	55.9
		15.6	18.1	14.0	27.2	34.4	41.8	42.6	41.5	34.4	24.6	17.3	15.6	27.3
1959		29.7	30.9	43.4	53.4	59.3	72.2	82.3	75.4	64.5	50.2	33.0	31.8	52.2
		9.5	5.6	21.1	25.5	29.5	39.2	38.8	37.9	37.7	29.8	10.1	10.2	24.6
1960		26.3	33.5	42.7	51.5	59.4	72.8	89.2	76.9	73.7	56.5	37.4	28.8	54.1
		2.2	7.5	15.5	26.5	32.2	36.5	39.8	38.8	29.4	25.9	21.5	11.0	23.9
1961		33.3	39.5	44.6	49.4	65.3	81.0	82.8	87.1	62.9	51.3	35.0	27.9	55.0
		10.1	24.1	20.8	26.8	34.1	38.3	42.2	41.4	29.8	25.0	12.5	10.3	26.3
1962		26.1	33.0	40.5	58.6	60.5	73.4	78.8	76.1	70.9	55.3	40.2	34.1	54.0
		.9	10.0	14.3	26.6	33.3	35.6	39.4	38.3	29.3	31.2	27.0	22.6	25.7
1963		17.7	42.8	44.9	54.0	64.7	70.1	78.6	80.4	75.0	59.6	39.3	28.4	54.6
		-5.4	17.5	20.8	27.4	29.8	41.3	39.2	38.2	36.0	30.1	22.9	10.7	25.7
1964		31.9	36.9	37.0	50.2	61.5	69.2	80.5	72.8	62.5	55.2	38.8	25.0	51.8
		15.5	12.3	14.1	26.4	29.8	37.5	40.9	37.9	32.9	27.1	22.3	7.6	25.4
1965		32.9	34.9	38.5	54 E	61.2	70.0	80.7	77.4	54.3	59.8	39.6	32.1	53.0
		18.6	12.8	4.3	27 E	31.8	39.7	40.7	43.0	31.5	28.1	22.0	16.9	26.4
1966		28.4	37.1	44.3	52.1	68.4	67.3	80.6	77.5	76.5	54.4	37.9	33.0	54.8
		12.0	11.5	16.1	25.6	33.1	37.6	40.7	37.9	35.0	27.2	20.0	18.6	26.3
1967		33.7	38.2	37.7	48.8	62.5	72.6	87.1	91.2	84.5	56.1	39 E	29.7	56.8
		16.1	15.9	15.9	23.2	30.8	36.8	40.1	37.8	36.3	29.4	20 E	12.5	26.2
1968		30 E	41 E	50 E	52 E	63.4	71.4	82.6	75.2	67.5	52.5	38.8	23.3	54.0
		10 E	16 E	24 E	26 E	31.8	38.4	40.3	40.8	37.4	28.5	22.7	7.0	26.9
1969		20.2	37.9	47.3	57.7	67.6	71.6	79.5	86.5	73.4	50.2	41.4	31.7	55.4
		0.4	9.6	16.4	29.0	32.2	40.7	38.1	34.1	35.1	25.9	21.8	17.8	25.1
1970		28.3	39.4	42.0	47.2	67.1	77.4	83.3	86.2	63.9	53.4	38.4	29.2	54.7
		11.2	15.1	16.5	25.8	31.8	42.6	42.9	36.5	31.6	24.0	17.7	8.8	25.4
1971		27.8	36.2	39.2	52.9	66.0	66.5	77.2	83.5	62.6	50.6	38.0	25.7	52.2
		9.6	15.5	16.8	25.3	33.1	38.3	39.3	42.0	29.8	22.8	21.6	5.9	25.0
1972		23.2	35.1	46.6	50.2	62.5	71.6	74.8	84.8	62.5	51.1	39.0	25.0	52.2
		0.4	15.2	23.7	24.2	32.0	41.2	40.7	42.0	33.0	23.7	21.9	6.1	25.3
1973		28.4	38.2	45.9	52.7	65.5	69.7	83.1	83.3	68.1	53.9	32.4	32.1	54.4
		6.2	9.1	22.6	25.9	30.8	39.6	40.8	39.0	34.5	27.9	19.3	18.4	26.2
1974		25.2	37.5	41.0	54.0	56.9	76.7	79.0E	75.8	71.4	61.4E	39.4	32.9	54.3
		9.9	18.9	18.4	28.8	33.5	40.6	42.7E	40.0	30.3	22.3E	21.6	17.1	27.0
1975		29.0	28.9	36.5	44.8	59.1	67.2	84.0	70.5	69.1	49.5	38.1	32.4	50.8
		7.2	5.3	14.7	18.5	30.3	37.9	44.9	40.8	31.1	28.7	17.4	14.6	24.3
1976		32.5	36.7	37.9	52.8	66.0	64.2	75.7	72.7	71.4	55.1	41.2	35.1	53.4
		10.8	15.6	12.5	26.0	32.1	36.5	42.7	44.5	32.8	21.3	16.7	13.9	25.5
1977		26.3	41.2	41.3	59.3	59.6	75.3	74.9	73.3	62.3	55.3	36.1	27.0	52.7
		6.0	15.2	20.7	23.3	32.0	38.1	42.0	40.8	33.9	22.0	17.1	5.1	24.7
1978		27.4	35.3	45.8	52.7	56.9	72.6	76.9	72.9	66.8	59.6	35.1	27.1	52.4
		6.4	13.4	17.2	26.6	32.6	37.5	42.5	38.1	35.6	21.8	11.8	-1.8	23.5
1979		15.7	33.1	46.1	51.8	63.0	73.4	80.5	82.7	75.0	59.2	36.9	38.6	54.7
		-18.2	6.9	16.3	25.6	31.0	35.5	38.3	37.9	32.0E	22.7	13.4	19.4	21.7
1980		24.6E	35.5	39.3	58.0	66.6	68.6	77.1	70.8	66.4	59.6	42.3	33.1	53.5
		-3.0E	16.3	19.5	25.9	34.8	38.1	40.4	37.5	32.7	21.1	17.6	11.9	24.4

(con.)

Table 29. (Con.)

Year	Average daily maximum and minimum temperatures												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	°F												
1981	32.9	36.1	48.7	53.4	62.6	63.2	75.1	83.5	70.1	52.9	43.9	30.6	54.4
	11.5	13.9	17.8	28.0	36.0	38.3	41.2	38.8	29.3	22.9	18.8	10.1	25.6
1982	27.5	31.9	42.4	47.0	61.5	72.7	74.7	77.3	66.1	55.0	35.1	29.8	51.8
	5.4	4.6	18.0	19.6	28.6	39.8	40.8	38.1	30.5	25.2	17.4	7.3	22.9
1983	34.9	39.9	43.9	54.4	64.4	68.2	72.5	81.8	64.4	56.9	40.4	18.2	53.3
	14.4	20.0	23.5	23.2	29.7	39.2	40.6	41.1	28.6	22.5	25.1	-8.5	25.0
1984	32.4	40.6	45.0	53.2	58.0	68.5	80.9	80.9	60.5	50.0	37.1	24.8	52.7
	13.0	16.2	23.5	25.8	31.2	37.3	39.1	39.2	30.0	21.5	18.0	1.8	24.7
1985	24.7	29.9	42.7	55.6	68.0	70.7	87.5	74.8	58.1	49.9	23.2	27.3	51.0
	6.1	0.0	10.3	25.4	31.5	35.5	39.1	37.4	30.8	24.2	0.9	6.5	20.6
10-year averages													
1951-60	28.1	34.8	40.5	51.6	64.2	70.2	80.8	78.4	69.3	54.2	37.1	30.8	53.3
	8.1	10.4	13.9	24.3	32.2	38.2	40.6	38.5	32.9	26.7	18.0	12.5	24.7
1961-70	28.3	38.1	42.7	52.4	64.2	72.4	81.5	81.0	69.1	54.8	38.8	29.4	54.4
	8.9	14.5	16.3	26.4	31.9	38.9	40.5	38.6	33.5	27.7	20.9	13.3	26.0
1971-80	26.0	35.8	42.0	52.9	62.2	70.6	78.3	77.0	67.6	55.5	37.9	30.9	53.1
	3.5	13.1	18.2	25.0	32.2	38.3	41.4	40.3	32.6	23.4	17.8	11.1	24.7

(con.)

Table 29. (Con.)

Summit - Observation time, mostly about 5 p.m.

Year		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
		Average daily maximum and minimum temperatures												
		°F												
1935	Max.	M	35.1	30.7	38.0	54.5	61.7	74.3	70.5	64.9	48.6	31.4	29.7	46.7E
	Min.	M	16.0	11.5	11.7	25.9	36.3	39.3	37.3	33.0	22.3	15.4	17.8	22.6E
1936		25.6	8.6	30.1	45.6	63.9	66.7	80.0	74.8	60.8	52.5	37.9	27.1	47.8
		10.8	-18.9	13.3	22.8	33.1	39.3	41.7	39.2	35.6	31.0	18.6	10.7	23.1
1937		6.8	23.9	33.1	42.6	57.3	62.4	72.3	68.2	61.5	51.8	34.7	27.5	45.2
		-13.4	5.2	12.0	23.2	30.6	36.4	41.3	40.1	32.2	32.6	19.6	12.2	22.7
1938		27.1	24.5	34.2	44.8	52.5	64.7	73.3	70.4	71.9	52.1	29.3	27.4	47.7
		13.8	2.8	17.9	25.4	31.2	38.3	43.8	37.4	35.4	29.9	16.9	13.2	25.5
1939		29.2	21.0	36.5	48.1	59.3	57.1	74.5	75.3	63.3	48.8	45.9	34.7	49.5
		17.6	3.8	17.1	24.4	33.1	35.2	40.4	35.4	36.1	31.2	27.6	21.5	27.0
1940		26.4	28.4	39.1	41.9	61.1	67.0	75.4	76.5	65.1	51.0	27.1	30.9	49.2
		5.3	12.0	23.1	24.2	31.5	37.4	40.1	35.8	38.9	33.6	9.6	15.0	25.5
1941		31.2	32.6	42.1	52.1	55.9	62.7	73.4	70.5	51.8	47.8	40.2	27.6	49.0
		11.7	6.9	15.3	22.8	32.4	38.3	41.8	38.5	32.5	26.6	23.7	15.4	25.5
1942		26.3	24.5	35.8	50.0	51.8	56.2	71.1	69.9	61.7	51.7	31.2	30.5	46.7
		10.5	7.0	15.8	25.3	30.8	37.8	39.9	38.6	34.9	30.4	16.5	17.5	25.4
1943		16.3	32.6	29.0	48.6	49.7	55.5	72.4	71.5	65.7	53.4	39.9	29.1	47.0
		-2.3	15.2	6.5	27.7	28.9	34.6	41.1	39.0	32.9	28.0	22.5	13.2	23.9
1944		30.2	26.1	29.9	49.1	59.1	60.3	70.9	68.2	62.4	59.9	32.1	25.4	47.8
		15.5	6.9	8.9	23.5	31.6	37.8	38.4	36.3	32.7	30.0	20.6	10.0	24.4
1945		27.9	29.8	33.9	36.8	M	M	74.2	74.3	55.7	53.5	32.3	28.0	M
		14.3	10.1	17.5	19.6	M	M	39.9	37.6	32.5	32.4	19.5	12.9	M
1946		29.2	29.9	41.1	50.3	58.1	62.5	76.1	73.2	59.8	40.1	28.8	29.5	48.2
		19.7	20.1	20.6	26.5	29.7	35.7	40.9	37.5	34.0	24.5	14.2	14.4	26.5
1947		24.2	30.7	35.9	47.1	59.6	59.2	78.8	70.7	58.7	48.8	31.4	30.5	48.0
		7.7	7.9	15.0	27.2	32.5	37.9	39.0	37.0	35.8	32.5	14.7	17.3	25.4
1948		28.1	23.9	29.1	44.3	54.0	64.8	69.1	70.5	64.4	54.8	31.0	20.6	46.2
		12.4	.8	7.8	20.8	31.4	41.8	38.2	40.3	32.7	25.5	20.3	5.1	23.1
1949		12.9	23.9	35.1	52.4	61.8	64.1	71.7	76.7	61.0	41.7	44.7	23.5	47.5
		-10.5	2.0	10.8	28.1	30.3	36.6	39.5	36.5	31.5	26.0	30.0	1.9	21.9
1950		4.0	29.8	27.8	39.6	49.7	58.8	70.6	70.4	62.8	47.3	32.6	32.5	43.8
		-16.0	17.0	12.3	20.3	29.4	36.2	39.4	38.2	31.6	30.4	15.0	19.7	22.8
1951		21.5	28.9	24.3	45.7	55.5	57.1	73.4	68.8	56.3	40.8	32.2	19.2	43.6
		5.0	5.9	4.9	18.2	29.7	31.5	39.5	37.5	30.7	26.4	19.1	3.4	21.0
1952		21.3	30.1	32.6	52.9	57.5	61.2	69.6	70.7	66.3	58.3	32.6	29.6	48.6
		6.8	14.9	11.2	22.8	32.4	37.4	39.6	38.6	36.1	29.1	17.7	18.9	25.5
1953		32.3	30.0	37.9	38.1	52.9	60.5	74.8	73.6	65.8	57.5E	40.0E	29.5E	49.4
		19.6	17.3	19.2	19.5	29.3	36.2	38.7	38.5	34.3	30.0E	25.0E	17.5E	27.1
1954		19.6	35.7	29.1	35.9	51.9	57.6	72.8	68.5	59.0	47.1	42.7	31.5	46.0
		-.7	23.4	7.4	21.9	29.7	37.8	40.0	37.6	32.9	25.2	28.9	16.7	25.1
1955		25.6	23.6	25.4	43.2	50.9	65.2	70.9	75.7	58.7	50.0	22.8	24.9	44.7
		13.9	8.0	5.8	24.9	31.7	37.6	45.0	38.8	32.3	30.7	2.9	6.9	23.2
1956		24.8	24.2	34.2	43.7	55.0E	63.9	72.8	69.5	61.9	45.7	33.4E	28.9E	46.5
		7.9	6.2	16.7	22.0	32.8E	38.3	41.7	38.8	33.8	28.2	19.5E	14.6E	25.0
1957		13.7	26.1	36.5	44.4	60.1	62.6	73.5	70.2	65.4	43.4	33.1	32.5	46.8
		-7.2	9.5	15.2	23.7	31.9	38.1	41.2	40.1	34.0	24.7	19.2	21.1	24.3
1958		32.4	31.5	33.8	42.5	66.6	60.7	67.4	74.7	57.6	51.5	28.2	27.9	47.9
		20.3	14.1	12.5	25.0	33.6	37.6	39.4	44.0	35.1	31.2	17.0	16.3	27.2
1959		25.5	24.1	35.3	45.5	52.0	68.1	76.6	67.0	55.4	44.9	29.4	31.5	46.2
		6.7	4.3	21.3	22.8	28.7	38.3	38.4	38.5	33.4	26.0	12.3	18.0	24.1
1960		22.9	25.1	34.6	43.0	55.2	65.9	82.2	68.3	66.9	49.1	31.3	30.0	47.9
		6.9	9.3	14.4	23.2	29.6	36.8	41.5	39.5	33.4	30.6	17.8	14.3	24.8
1961		31.1	33.6	37.1	42.5	57.9	74.5	75.4	82.8	52.9	45.8	30.9	21.2	48.8
		15.4	20.8	18.6	21.9	32.0	39.8	40.9	41.6	28.9	27.3	13.8	9.3	25.9
1962		21.3	23.6	33.6	52.4	53.6	66.0	69.7	67.2	59.2	46.3	33.9	28.7	46.3
		4.5	6.3	10.5	26.3	32.0	38.2	35.5	39.4	32.1	28.6	23.1	13.2	24.1
1963		14.2	37.6	40.7	47.2	57.3	63.4	71.4	74.9	69.2	53.9	36.3	26.5	49.4
		-5.6	20.8	19.9	22.7	29.0	39.0	40.0	38.7	37.6	31.7	21.8	13.4	25.8
1964		26.3	30.6	29.1	42.3	51.8	61.6	73.7	65.2	52.4	51.1	34.2	20.5	44.9
		15.6	17.6	12.7	23.2	29.7	38.2	42.5	38.5	30.9	30.1	20.2	3.0	25.2
1965		26.7	26.8	26.9	45.0	51.2	61.3	71.7	68.5	45.4	52.9	32.9	27.9	44.8
		16.1	10.7	.1	23.4	29.9	35.7	39.3	40.0	27.5	33.2	18.8	12.1	23.9
1966		19.7	28.4	35.5	42.6	56.3	58.6	71.6	70.5	67.3	47.8	35.2E	28.0E	46.8
		1.3	12.0	16.0	21.8	29.5	33.7	39.7	37.5	38.7	31.8	18.0E	15.0E	24.6
1967[1]		27.7	30.9	28.6	38.1	52.2	61.4	74.2	78.1	71.2	47.0	34.7	23.8	47.3
		13.0	17.0	7.8	18.4	29.0	35.1	43.8	38.0	37.7	30.0	20.3	9.7	25.0

(con.)

Table 29. (Con.)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	Average daily maximum and minimum temperatures												
	°F												
1968	28.1	37.2	43.2	42.3	55.5	63.5	73.7E	66.0E	60.5	46.9	34.8	19.1	47.6
	9.7	17.6	23.7	22.5	28.1	38.6	41.0E	41.0E	37.2	29.3	21.7	1.4	26.0
1969	12.0	30.8	37.5	51.9	60.2	62.7	72.0	77.2	63.3	41.5	37.6	29.6	48.0
	-8.1	7.6	12.7	26.6	31.0	36.6	39.3	40.8	33.5	22.6	21.6	17.6	23.5
1970	23.4	34.3	32.1	38.2	55.9	70.0	75.8	76.5	53.2	45.7	34.6	24.2	47.0
	7.3	15.8	12.9	18.8	29.5	39.8	43.9	37.6	31.6	23.2	14.7	8.5	23.6
1971	20.5	31.1	30.4	44.3	57.8	60.4	69.8	80.0	56.7	45.6	34.9	22.3	46.2
	4.2	13.1	12.0	21.4	28.1	35.8	35.9	41.6	32.6	27.2	22.9	4.9	23.3
1972	18.5	30.6	41.5	43.1	55.0	68.7	70.3	75.9	53.1	48.8	35.5	21.0	46.8
	-.4	12.6	21.7	21.3	31.0	39.2	41.5	43.1	30.9	26.0	23.4	8.3	24.9
1973[1]	25.6	36.8	41.1	43.9	58.1	63.2	74.4	72.8	59.0	43.8	21.8	26.0	47.2
	7.4	13.4	20.6	23.0	30.1	38.5	35.7	39.8	33.1	25.3	10.0	15.6	24.4
1974	20.0E	29.8	33.6	46.7	49.6	71.7	71.4	66.1	59.7	52.4	34.2	31.1	47.2
	7.0E	19.3	14.4	27.5	31.6	40.2	40.6	39.1	32.8	29.6	21.2	19.1	26.9
1975	22.9	20.9	24.5	34.9	49.2	59.0	73.3	62.3	63.8	44.5	31.7	27.7	42.9
	6.3	4.8	9.1	19.3	30.2	34.9	46.7	38.4	36.1	31.8	18.9	15.0	24.3
1976	25.7	27.5	30.1	46.6	59.5	59.2	71.0	68.2	65.5	50.9	39.5	30.6	47.9
	13.5	14.4	11.6	24.8	32.4	37.0	44.8	46.5	39.9	33.5	22.5	19.4	28.4
1977	22.8	36.5	33.5	50.1	54.1	69.0	69.6	64.0	58.3	48.1	29.2	20.0E	46.3
	9.2	23.1	19.1	26.4	31.3	39.4	45.5	39.7	35.1	29.0E	16.2	7.0E	26.8
1978	18.5	27.8	40.5	41.6	49.4	65.5	70.3	66.5	58.6	52.2	29.0	19.7	45.0
	3.8	11.9	26.2	26.0	32.4	38.6	46.2	43.8	41.8	31.5	15.1	6.1	27.0
1979	12.1	23.6	37.8	43.0	(Station closed)								
	-4.9	5.1	20.3	26.3									
10-year averages													
1941-50	23.0	28.4	34.0	47.0	55.5	60.5	72.8	71.6	60.4	49.9	34.4	27.7	47.1
	6.3	9.4	13.1	24.2	30.8	37.4	39.8	38.0	33.1	28.6	19.7	12.7	24.4
1951-60	24.0	27.9	32.4	43.5	55.8	62.3	73.4	70.7	61.3	48.8	32.6	28.6	46.8
	7.9	11.3	12.9	22.4	30.9	37.0	40.5	39.2	33.6	28.2	17.9	14.8	24.7
1961-70	23.1	31.4	34.4	44.3	55.2	64.3	72.9	72.7	59.5	47.9	34.5	25.0	47.1
	6.9	14.6	13.5	22.6	30.0	37.5	40.5	39.3	33.6	28.8	19.4	10.3	24.8
1971-79	20.7	29.4	34.8	43.8	54.1	64.6	71.3	69.5	59.3	48.3	32.0	24.8	46.1
(8 or 9 yr.)	5.1	13.1	17.2	24.0	30.9	38.0	42.1	41.5	35.3	29.3	18.8	11.9	25.6

[1]Station site changed in 1967 and again in 1973.

Table 30.--Daily maximum and minimum temperature statistics (°F) for West Glacier, Polebridge, and Summit; based on years 1949-78, except as noted, and on 24-hour period ending about 5 p.m., m.s.t. Also, July-August data for Desert Mountain Lookout; based on 1951-70 and 24 hours ending at 4 p.m. Letter M following year of highest or lowest average denotes average computed with incomplete data; based on at least 6 daily values per 10-day period

MAXIMUM DAILY TEMPERATURE

STATION NUMBER 248809 WEST GLACIER

MEAN, STANDARD DEVIATION, AND EXTREME VALUES 1949-1978

	10-DAY AND MONTHLY PERIOD MEANS					10-DAY AND MONTHLY EXTREMES								
PRD. BEGINS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JAN 1	26.6	6.4	27.5	37.6 54	12.1 74	47 54	37.1	5.8	37.0	-4 59	13.6	9.3	12.5	JAN 1
JAN 11	27.8	8.3	29.0	39.4 53	6.8 50	48 74	37.2	6.7	39.5	-12 50	14.8	12.4	13.5	JAN 11
JAN 21	27.5	9.0	30.0	39.1 71	8.2 69	49 62	37.8	7.6	39.0	-6 72	14.7	12.7	18.0	JAN 21
FEB 1	32.9	6.1	33.5	41.6 52	16.1 75	52 63	41.5	5.3	40.5	0 50	22.7	10.0	22.5	FEB 1
FEB 11	35.0	4.1	35.0	45.9 77	25.0 56	50 77	42.5	3.4	42.0	2 56	26.8	9.0	30.0	FEB 11
FEB 21	36.5	6.3	36.5	45.6 73	17.6 62	58 50	43.2	6.3	44.5	7 57	29.2	8.4	31.0	FEB 21
MAR 1	36.5	5.7	36.0	51.1 68	18.6 51	61 68	45.2	5.7	45.0	0 51	25.6	9.5	26.5	MAR 1
MAR 11	41.2	3.7	41.5	48.4 72	34.1 67	59 68	49.3	4.9	48.5	14 65	32.4	7.0	34.0	MAR 11
MAR 21	44.4	5.7	44.5	54.7 78	31.9 55	63 66	53.3	5.7	54.0	10 55	34.7	8.7	37.0	MAR 21
APR 1	49.9	5.0	49.0	58.5 60	39.2 75	72 77	58.3	6.4	58.0	20 54	40.9	5.3	41.0	APR 1
APR 11	51.6	5.4	50.5	65.6 62	42.8 55	75 62	61.7	6.8	61.0	32 51	41.5	4.9	40.5	APR 11
APR 21	54.5	6.2	54.5	71.5 77	42.6 54	79 77	65.3	7.5	66.0	33 54	44.1	6.0	42.5	APR 21
MAY 1	60.1	6.3	59.0	76.2 66	51.3 64	82 66	69.9	6.3	70.5	35 51	48.0	7.4	47.0	MAY 1
MAY 11	64.2	5.5	64.0	75.1 73	50.3 74	83 73	74.9	5.6	76.5	43 59	52.2	5.4	52.0	MAY 11
MAY 21	66.3	5.3	66.0	79.3 58	56.7 78	86 66	76.2	5.6	76.0	45 73	55.8	6.1	55.5	MAY 21
JUN 1	69.5	5.4	68.0	80.9 70	60.6 54	89 70	78.4	5.9	78.0	49 74	58.3	6.3	58.5	JUN 1
JUN 11	71.1	5.5	70.0	86.5 74	62.3 54	90 74	80.7	5.3	80.5	49 54	60.4	6.6	60.5	JUN 11
JUN 21	71.9	5.4	70.5	81.0 61	61.5 69	90 70	82.2	5.6	82.5	45 60	58.9	7.2	57.0	JUN 21
JUL 1	76.9	5.6	76.5	87.6 75	61.9 55	94 73	85.4	4.5	86.0	46 55	66.9	7.2	68.0	JUL 1
JUL 11	80.2	4.7	80.0	88.4 60	70.1 72	96 75	87.7	4.4	88.0	57 63	70.1	6.8	70.0	JUL 11
JUL 21	81.3	3.5	81.0	87.4 74	74.4 49	93 75	88.4	2.3	88.5	59 52	70.9	6.9	72.5	JUL 21
AUG 1	80.9	4.4	82.0	89.5 71	72.5 62	96 61	88.0	3.7	88.0	60 56	71.0	5.8	71.5	AUG 1
AUG 11	78.9	6.6	79.5	92.9 67	64.6 68	95 73	85.5	4.5	85.0	56 68	70.6	8.7	72.5	AUG 11
AUG 21	73.8	6.9	73.0	85.2 67	60.9 60	99 69	83.4	6.4	83.5	50 60	62.7	7.7	62.0	AUG 21
SEP 1	71.6	6.2	69.5	87.5 67	57.4 64	94 67	80.1	6.5	79.5	49 65	59.9	6.8	60.0	SEP 1
SEP 11	65.5	6.2	65.0	75.1 66	46.1 65	87 73	75.2	7.4	76.0	38 65	54.1	6.8	55.0	SEP 11
SEP 21	61.9	8.1	60.5	79.2 67	49.3 61	89 63	70.7	9.2	70.5	37 72	52.0	9.2	51.5	SEP 21
OCT 1	57.1	5.4	56.0	67.4 52	48.0 49	76 57	66.9	5.7	68.0	34 57	47.5	6.4	46.0	OCT 1
OCT 11	53.2	5.4	52.0	62.7 74	42.3 51	69 76	60.6	6.1	61.5	30 51	44.9	6.1	44.5	OCT 11
OCT 21	47.5	5.5	48.0	57.5 74	37.5 75	65 55	55.9	6.1	57.0	24 71	39.7	7.4	41.5	OCT 21
NOV 1	41.8	4.4	41.5	49.5 65	28.7 73	60 75	50.6	6.1	51.0	18 73	33.6	6.7	35.5	NOV 1
NOV 11	36.4	6.4	37.0	43.5 54	15.4 55	57 56	43.9	5.9	42.5	2 55	28.6	9.0	31.0	NOV 11
NOV 21	34.6	4.1	34.5	43.3 49	26.2 75	53 62	43.5	5.5	42.5	10 77	25.5	7.2	26.5	NOV 21
DEC 1	31.6	5.6	32.5	40.9 75	10.9 72	52 65	41.0	5.6	40.0	-3 72	22.6	9.7	26.0	DEC 1
DEC 11	30.1	6.6	30.5	38.3 62	16.3 64	46 59	38.7	3.7	39.0	-8 64	21.6	11.4	25.5	DEC 11
DEC 21	30.3	6.3	31.0	37.6 50	10.9 68	51 49	39.8	5.7	40.0	-9 68	19.9	9.6	21.5	DEC 21
MONTH														MONTH
JAN	27.3	5.4	28.0	37.0 53	13.9 50	49 62	42.7	4.0	43.0	-12 50	6.5	9.9	5.0	JAN
FEB	34.7	3.2	35.0	40.1 63	28.7 49	58 50	46.4	4.1	46.5	0 50	18.7	8.9	18.0	FEB
MAR	40.8	3.5	40.5	49.2 68	33.0 55	63 66	54.1	5.0	54.5	0 51	23.4	9.7	24.5	MAR
APR	52.0	4.0	51.5	60.0 52	44.8 54	79 77	66.9	6.5	66.5	20 54	38.1	4.4	39.0	APR
MAY	63.6	3.8	63.0	74.6 58	57.1 78	86 66	78.6	4.1	79.0	35 51	45.8	4.9	45.0	MAY
JUN	70.8	3.5	71.0	79.7 61	64.7 54	90 74	85.3	3.5	86.0	45 60	53.9	4.3	53.5	JUN
JUL	79.5	2.7	78.5	84.9 67	74.2 55	96 75	90.2	2.5	89.5	46 55	63.3	5.8	62.5	JUL
AUG	77.8	4.9	77.0	87.4 67	70.2 64	99 69	89.3	3.9	89.0	50 60	61.6	6.8	61.5	AUG
SEP	66.3	5.3	67.0	80.1 67	53.9 65	94 67	81.3	5.8	80.0	37 72	48.5	6.4	48.5	SEP
OCT	52.4	3.9	52.0	60.9 52	45.6 51	76 57	67.6	4.7	68.0	24 71	38.3	6.3	40.5	OCT
NOV	37.6	3.2	37.5	42.7 49	28.6 55	60 75	52.1	5.0	53.0	2 55	22.9	8.3	24.5	NOV
DEC	30.7	3.6	31.5	35.8 57	23.1 51	52 65	43.6	4.8	44.0	-9 68	13.0	10.6	14.5	DEC

(con.)

Table 30. (Con.)

MINIMUM DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 248809 WEST GLACIER

1949-1978

PRD. BEGINS	10-DAY AND MONTHLY PERIOD MEANS: MEAN	STD. DEV.	MEDIAN	HIGHEST AVG. YR	LOWEST AVG. YR	10-DAY AND MONTHLY EXTREMES: HIGH. YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW. YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JAN 1	12.3	9.1	13.5	29.1 54	-6.5 74	34 63	26.4	6.7	28.5	-28 49	-6.5	13.1	-1.0	JAN 1
JAN 11	14.5	11.3	18.5	29.3 53	-10.4 50	37 74	27.1	7.3	29.0	-33 49	-2.9	16.5	-0.5	JAN 11
JAN 21	12.8	11.9	14.5	31.4 53	-10.0 57	36 71	27.1	8.9	30.0	-35 50	-6.7	16.7	-1.0	JAN 21
FEB 1	16.9	8.0	17.5	28.9 61	-4.3 75	34 68	29.1	5.3	31.0	-32 50	-0.5	14.3	2.0	FEB 1
FEB 11	19.9	6.7	21.0	28.5 76	5.2 56	36 49	30.7	2.7	31.0	-30 56	4.6	11.8	7.0	FEB 11
FEB 21	19.0	8.2	19.5	29.0 54	-5.1 62	36 72	29.7	4.7	31.0	-23 62	6.6	12.4	8.5	FEB 21
MAR 1	17.9	5.7	18.0	29.1 77	0.2 51	36 68	30.7	3.6	31.0	-30 60	2.8	11.1	4.0	MAR 1
MAR 11	21.6	5.5	22.0	32.0 72	9.8 65	37 76	31.8	2.8	32.0	-20 56	7.5	12.5	9.0	MAR 11
MAR 21	24.7	5.9	26.0	32.1 78	8.8 55	37 68	32.9	2.5	33.0	-21 55	13.6	12.3	18.0	MAR 21
APR 1	27.4	2.6	27.0	31.4 74	19.4 75	39 63	34.7	2.4	35.0	3 54	18.7	5.4	20.5	APR 1
APR 11	28.6	2.4	28.0	33.1 58	21.1 51	42 62	36.7	2.5	36.0	5 51	20.9	4.3	21.0	APR 11
APR 21	31.0	2.5	30.0	36.8 53	25.8 54	44 74	38.2	3.4	38.0	9 51	23.5	4.2	24.0	APR 21
MAY 1	34.1	2.3	34.0	40.2 57	30.5 65	50 57	41.2	3.5	40.5	13 54	26.7	3.4	27.0	MAY 1
MAY 11	36.0	2.0	35.0	40.5 49	33.1 66	57 70	43.8	3.7	43.0	25 59	29.6	2.5	29.5	MAY 11
MAY 21	38.7	2.8	38.0	46.7 58	33.0 75	55 50	47.7	3.6	48.0	26 67	30.2	2.8	30.0	MAY 21
JUN 1	41.9	2.9	41.0	46.9 57	36.7 50	57 52	50.1	3.3	49.0	24 59	33.9	3.7	34.0	JUN 1
JUN 11	43.4	2.4	43.0	49.1 58	39.8 69	59 66	50.9	3.6	49.5	27 69	35.3	4.0	35.0	JUN 11
JUN 21	44.2	2.4	44.0	49.2 70	40.2 64	60 68	52.7	3.7	52.0	32 75	37.1	3.0	37.0	JUN 21
JUL 1	45.8	2.9	45.0	53.6 75	40.6 59	61 75	54.5	3.8	54.0	32 73	38.0	3.6	38.0	JUL 1
JUL 11	47.2	2.4	46.0	51.7 75	42.3 65	64 67	56.5	4.1	57.0	32 65	39.3	3.4	39.5	JUL 11
JUL 21	46.8	2.6	46.0	51.2 77	42.3 54	62 60	55.1	3.8	56.0	34 73	39.8	2.8	40.0	JUL 21
AUG 1	47.2	2.7	47.0	53.9 76	42.3 69	62 68	55.0	3.6	54.0	36 75	40.4	3.4	39.5	AUG 1
AUG 11	45.6	2.5	45.0	51.1 75	41.0 70	62 58	53.3	3.8	52.5	32 59	38.3	3.2	39.0	AUG 11
AUG 21	44.4	2.7	43.5	51.1 58	39.2 55	62 58	53.1	3.9	52.5	32 65	36.7	3.3	37.0	AUG 21
SEP 1	41.0	3.3	40.0	48.5 78	33.2 62	67 67	51.0	5.4	50.0	27 62	33.4	3.8	33.0	SEP 1
SEP 11	38.1	4.1	38.0	45.2 68	29.0 70	57 76	48.5	4.5	48.5	19 70	30.2	4.6	30.0	SEP 11
SEP 21	36.7	3.3	36.5	42.2 69	30.2 70	63 67	45.9	5.4	45.0	20 61	29.4	3.2	29.0	SEP 21
OCT 1	33.7	2.7	33.0	40.2 51	29.2 74	50 76	43.1	4.1	44.0	18 50	26.3	3.2	26.0	OCT 1
OCT 11	31.8	3.5	32.0	38.7 56	24.6 69	49 50	40.2	3.7	41.0	18 76	24.7	3.6	25.0	OCT 11
OCT 21	30.0	3.1	29.5	36.0 73	24.0 71	48 62	39.6	4.4	41.0	3 71	21.7	5.3	22.0	OCT 21
NOV 1	26.5	4.5	26.0	34.5 62	17.9 73	44 75	34.7	4.5	34.0	4 71	17.3	6.7	18.0	NOV 1
NOV 11	24.4	8.2	26.5	34.7 54	0.5 55	40 67	33.4	4.2	33.0	-29 59	13.0	12.4	17.5	NOV 11
NOV 21	22.7	4.3	22.0	30.0 49	13.4 70	41 62	32.3	3.4	32.0	-10 77	9.6	8.8	11.5	NOV 21
DEC 1	19.8	7.7	21.0	28.8 64	-7.7 72	39 75	30.9	3.3	31.5	-25 72	6.1	12.2	7.5	DEC 1
DEC 11	18.8	8.6	19.5	31.6 62	0.8 64	36 62	29.7	4.1	32.0	-32 64	5.4	13.4	7.5	DEC 11
DEC 21	17.9	8.1	19.0	29.1 50	-3.7 68	35 50	29.3	4.9	31.0	-36 68	2.4	13.2	4.5	DEC 21
MONTH														MONTH
JAN	13.2	7.8	14.0	27.1 53	-5.8 49	37 74	32.0	3.2	32.0	-35 50	-14.7	13.2	-1.0	JAN
FEB	18.6	4.6	19.0	27.7 61	9.3 49	36 72	32.5	1.7	32.0	-32 50	-6.9	13.2	-1.0	FEB
MAR	21.5	4.0	21.0	28.5 68	12.9 65	37 76	34.2	1.8	34.5	-30 60	-1.4	12.3	-0.5	MAR
APR	29.0	1.7	29.0	32.3 74	24.0 51	44 74	39.4	2.7	40.0	3 54	17.2	5.3	19.0	APR
MAY	36.3	1.6	36.0	40.3 58	33.6 55	57 70	48.4	3.6	48.0	13 54	26.2	3.0	26.5	MAY
JUN	43.2	1.6	43.0	46.5 58	39.8 51	60 68	54.5	3.3	55.0	24 59	32.2	3.1	32.0	JUN
JUL	46.6	1.6	46.0	51.0 75	43.9 65	64 67	58.5	2.5	59.0	32 73	36.4	2.5	36.0	JUL
AUG	45.7	1.8	45.0	49.4 58	42.1 55	62 68	56.9	3.0	57.0	32 65	35.6	2.4	35.5	AUG
SEP	38.6	2.5	38.0	43.3 67	34.0 70	67 67	52.5	4.6	52.0	19 70	27.6	3.2	28.0	SEP
OCT	31.7	2.1	31.0	35.1 63	27.7 70	50 76	44.7	2.9	44.5	3 71	20.7	4.9	20.0	OCT
NOV	24.5	3.7	24.0	31.4 54	15.6 55	44 75	36.6	3.4	36.0	-29 59	5.3	10.8	7.0	NOV
DEC	18.8	4.9	18.5	25.4 62	9.1 78	39 75	32.8	2.1	33.0	-36 68	-5.7	13.2	-1.0	DEC

(con.)

Table 30. (Con.)

MAXIMUM DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 246615 POLEBRIDGE 1949-1978

PRD. BEGINS	10-DAY AND MONTHLY PERIOD MEANS: MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	10-DAY AND MONTHLY EXTREMES: HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JAN 1	26.2	6.6	26.0	37.4 54	8.9 74	51 54	38.0	6.9	37.0	-10 63	11.3	9.8	10.0	JAN 1
JAN 11	27.1	8.9	29.0	39.3 53	6.5 50	48 73	37.4	6.9	39.0	-9 63	12.3	12.7	12.0	JAN 11
JAN 21	27.6	9.2	30.0	38.4 53	8.2 57	51 62	39.0	8.3	40.0	-5 57	13.8	12.0	17.0	JAN 21
FEB 1	34.1	6.9	34.0	46.4 54	14.8 75	58 63	44.2	6.2	44.0	2 50	22.0	9.8	23.0	FEB 1
FEB 11	36.5	4.3	37.0	46.4 77	25.4 56	54 77	44.9	4.7	45.0	2 56	27.4	8.8	29.0	FEB 11
FEB 21	37.6	6.7	38.0	47.6 73	15.9 62	55 58	45.1	6.5	46.0	7 57	29.8	9.1	32.0	FEB 21
MAR 1	37.0	5.9	37.0	46.4 65	19.3 51	62 53	46.9	6.1	48.0	0 51	24.8	9.7	26.0	MAR 1
MAR 11	41.6	4.0	42.0	51.7 72	34.2 67	61 72	50.7	5.4	51.0	11 67	31.7	7.4	32.0	MAR 11
MAR 21	44.9	5.8	45.0	55.5 78	33.9 65	65 78	54.8	6.2	55.0	9 55	34.5	9.6	38.0	MAR 21
APR 1	50.5	5.5	50.0	59.2 69	36.4 75	74 77	58.7	6.8	58.0	22 54	41.1	6.0	42.0	APR 1
APR 11	52.1	5.5	52.0	65.3 62	43.5 55	78 62	62.6	7.1	63.0	34 72	42.5	5.3	43.0	APR 11
APR 21	53.9	6.2	53.0	68.2 52	40.8 54	81 77	65.3	7.6	63.0	29 54	42.5	4.8	42.0	APR 21
MAY 1	59.8	6.2	57.5	74.3 66	51.3 64	85 76	70.7	7.0	68.5	38 56	47.8	6.5	46.5	MAY 1
MAY 11	64.4	5.4	64.0	74.8 73	49.7 74	84 73	74.8	6.0	76.0	43 74	52.5	5.1	51.0	MAY 11
MAY 21	66.1	5.8	64.0	80.6 58	56.3 78	86 58	76.1	6.0	77.0	40 78	54.7	7.4	54.0	MAY 21
JUN 1	69.6	5.7	68.0	81.5 70	59.6 54	89 77	78.5	6.1	77.5	46 76	58.3	6.8	59.0	JUN 1
JUN 11	71.2	5.6	69.0	86.2 74	63.8 73	91 74	81.3	5.9	80.0	44 76	60.0	7.2	59.0	JUN 11
JUN 21	72.3	5.5	71.0	82.1 61	61.2 69	91 55	82.5	5.5	81.5	48 71	60.4	6.8	59.0	JUN 21
JUL 1	77.4	5.6	77.0	87.8 68	65.4 55	95 73	85.8	5.5	86.0	54 55	66.9	6.3	65.0	JUL 1
JUL 11	80.6	5.4	81.0	93.0 60	69.9 72	100 60	88.8	4.6	88.0	58 78	71.0	7.8	70.0	JUL 11
JUL 21	82.3	4.1	82.0	91.3 60	74.0 49	99 65	90.0	3.3	90.0	57 75	71.4	7.5	74.0	JUL 21
AUG 1	82.2	4.7	83.0	90.0 71	73.8 62	101 61	90.3	4.3	90.0	55 76	71.7	6.8	73.0	AUG 1
AUG 11	80.1	6.8	80.5	97.0 67	67.3 68	99 67	87.4	5.1	88.5	55 68	71.3	9.3	72.5	AUG 11
AUG 21	75.1	7.0	74.0	88.9 67	64.3 75	102 69	85.7	6.5	85.0	53 78	64.4	7.6	64.5	AUG 21
SEP 1	73.8	6.8	73.0	91.3 67	60.3 64	99 67	83.2	6.7	82.5	50 75	62.0	6.8	62.5	SEP 1
SEP 11	67.7	6.7	67.0	78.4 67	48.2 65	90 69	78.5	7.1	78.5	38 65	55.0	7.9	55.0	SEP 11
SEP 21	64.4	8.9	63.0	83.7 67	50.2 72	90 67	74.6	7.8	75.5	40 72	53.4	10.5	50.0	SEP 21
OCT 1	59.4	6.1	58.0	70.0 52	48.8 59	85 55	71.3	6.7	72.0	35 59	48.1	7.5	48.0	OCT 1
OCT 11	54.8	6.2	54.0	65.9 63	43.6 51	73 58	64.0	6.6	65.0	31 51	44.3	6.1	45.0	OCT 11
OCT 21	48.1	6.3	48.5	59.9 65	37.1 61	70 69	58.2	6.7	59.5	21 57	39.1	7.6	40.5	OCT 21
NOV 1	43.1	4.9	43.0	50.2 75	27.6 73	64 75	53.1	5.5	52.0	14 73	34.0	7.2	35.0	NOV 1
NOV 11	36.5	6.3	37.0	44.1 54	15.9 55	56 53	45.6	4.9	45.0	0 55	27.6	9.7	31.0	NOV 11
NOV 21	34.4	4.4	34.0	43.2 49	26.5 75	56 54	44.4	5.0	44.0	11 75	23.3	6.7	24.0	NOV 21
DEC 1	31.4	5.6	32.0	39.6 65	10.3 72	52 65	42.1	4.9	42.0	-2 56	20.3	10.2	23.0	DEC 1
DEC 11	29.7	7.0	29.5	40.1 76	14.6 64	50 76	40.0	4.4	40.0	-9 64	19.8	11.3	20.5	DEC 11
DEC 21	29.2	6.8	30.5	38.6 50	9.7 68	49 63	39.6	5.5	40.0	-13 68	17.2	9.9	21.0	DEC 21
MONTH														MONTH
JAN	27.0	5.7	27.0	37.0 53	13.3 50	51 62	43.4	4.0	43.0	-10 63	5.3	9.5	4.0	JAN
FEB	36.0	3.6	36.0	42.8 63	28.9 75	58 63	49.4	3.7	50.0	2 56	18.5	8.8	19.0	FEB
MAR	41.3	3.4	41.0	47.3 69	34.3 55	65 78	55.9	5.7	56.0	0 51	22.0	9.6	23.0	MAR
APR	52.2	4.1	52.0	59.5 52	44.7 54	81 77	67.5	6.8	66.5	22 54	37.8	4.7	38.5	APR
MAY	63.5	4.0	63.0	75.1 58	56.9 78	86 58	79.0	4.1	79.5	38 56	46.0	4.5	45.0	MAY
JUN	71.1	3.6	71.0	81.0 61	64.2 76	91 74	85.8	3.4	86.0	44 76	54.9	4.9	55.0	JUN
JUL	80.2	3.4	79.0	89.2 60	74.8 72	100 60	91.7	3.3	91.0	54 55	63.9	5.5	64.0	JUL
AUG	79.0	5.1	77.5	91.2 67	70.5 75	102 69	91.8	4.3	91.5	53 78	63.1	6.7	64.0	AUG
SEP	68.6	5.8	68.5	84.5 67	54.3 65	99 67	84.2	5.9	83.5	38 65	48.5	6.8	46.0	SEP
OCT	53.9	4.3	53.0	63.6 52	46.8 51	85 55	72.6	5.2	72.0	21 57	37.8	6.6	37.0	OCT
NOV	38.0	3.5	38.0	44.8 49	28.5 55	64 75	53.8	5.0	53.0	0 55	21.0	8.8	23.0	NOV
DEC	30.1	3.7	31.0	35.5 57	21.1 51	52 65	44.5	4.3	45.0	-13 68	10.5	10.3	13.0	DEC

(con.)

Table 30. (Con.)

MINIMUM DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 246615 POLEBRIDGE

1949-1978

PRD. BEGINS	10-DAY AND MONTHLY PERIOD MEANS MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	10-DAY AND MONTHLY EXTREMES HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JAN 1	5.5	9.6	7.0	24.2 54	-13.6 73	34 53	24.2	8.0	26.0	-42 59	-17.1	12.6	-1.0	JAN 1
JAN 11	8.0	13.5	14.0	28.0 53	-18.9 50	36 74	25.6	8.7	27.0	-45 54	-14.1	19.1	-1.0	JAN 11
JAN 21	6.5	13.4	9.0	28.7 53	-19.3 63	34 60	26.2	8.7	29.0	-46 57	-17.5	17.8	-1.0	JAN 21
FEB 1	10.3	9.0	12.0	24.1 61	-12.7 75	39 63	27.6	7.1	29.0	-40 50	-10.4	14.2	-1.0	FEB 1
FEB 11	13.9	8.0	15.0	24.2 61	-2.4 49	34 71	28.1	4.0	29.0	-40 56	-5.2	13.5	-1.0	FEB 11
FEB 21	12.7	9.3	14.0	24.9 58	-15.9 62	36 61	26.9	6.3	28.0	-33 62	-3.0	13.9	0.0	FEB 21
MAR 1	11.0	6.6	11.0	23.5 77	-8.4 51	35 66	28.5	6.0	30.0	-38 60	-8.9	11.9	-1.0	MAR 1
MAR 11	15.3	6.8	15.0	29.3 72	2.7 65	36 72	29.6	4.3	30.0	-34 56	-1.6	14.1	0.0	MAR 11
MAR 21	20.3	7.6	21.0	29.6 56	0.0 65	35 67	31.1	2.6	32.0	-32 55	5.2	15.8	12.0	MAR 21
APR 1	23.3	3.9	22.5	28.6 74	9.8 75	40 74	32.7	3.1	33.0	-6 75	13.4	6.8	14.0	APR 1
APR 11	25.1	3.5	25.0	30.2 69	14.3 51	39 64	34.2	3.1	34.0	-9 51	15.6	6.5	15.5	APR 11
APR 21	27.1	2.8	27.0	33.9 53	22.5 54	43 59	35.1	3.8	35.0	-2 51	18.3	5.5	19.5	APR 21
MAY 1	29.8	2.4	30.0	34.1 57	22.5 54	44 63	38.2	2.9	38.0	-5 54	21.6	5.8	23.0	MAY 1
MAY 11	31.9	2.0	32.0	35.6 49	25.9 63	46 57	39.2	3.9	38.5	19 53	25.5	3.0	26.0	MAY 11
MAY 21	34.1	3.0	34.0	39.6 58	24.9 64	49 61	43.0	4.6	43.0	20 64	25.9	3.0	25.5	MAY 21
JUN 1	38.0	3.4	37.0	43.9 57	31.3 51	59 52	47.3	5.0	47.0	21 51	29.4	3.2	29.5	JUN 1
JUN 11	38.3	2.5	37.0	43.7 65	33.7 55	55 74	47.0	3.9	46.5	24 73	30.4	3.4	30.0	JUN 11
JUN 21	39.3	2.9	38.5	45.2 70	35.3 67	55 55	47.8	3.5	48.0	24 49	31.4	3.2	31.0	JUN 21
JUL 1	40.2	3.0	39.0	47.5 78	35.0 59	60 75	48.4	3.5	48.0	27 73	32.9	4.5	32.0	JUL 1
JUL 11	41.7	2.7	41.0	47.5 55	36.8 62	62 67	50.9	4.8	51.0	28 62	33.8	3.3	33.0	JUL 11
JUL 21	40.9	3.0	40.0	45.5 77	34.3 63	57 58	50.0	3.8	50.0	27 68	33.4	3.5	34.0	JUL 21
AUG 1	40.8	3.7	40.0	51.4 76	34.4 69	58 71	48.5	4.4	48.0	29 57	33.6	4.3	32.0	AUG 1
AUG 11	38.6	3.1	38.0	42.9 72	32.3 70	54 65	46.3	5.1	48.0	26 73	31.5	3.3	31.0	AUG 11
AUG 21	38.1	3.2	38.5	43.8 54	31.0 55	55 71	47.1	4.4	47.5	26 69	30.0	3.1	29.5	AUG 21
SEP 1	35.1	3.2	34.0	43.4 78	25.9 62	54 67	44.7	4.5	44.5	18 62	27.3	3.4	27.0	SEP 1
SEP 11	32.2	4.2	31.0	41.0 59	23.7 50	53 59	42.1	6.0	41.5	14 57	24.2	5.0	25.0	SEP 11
SEP 21	31.3	3.1	30.0	39.2 69	24.7 60	60 67	40.8	5.3	40.0	17 60	24.3	3.7	24.5	SEP 21
OCT 1	28.2	3.4	27.0	38.6 51	22.6 78	47 51	37.7	4.8	38.0	10 50	19.6	4.0	19.0	OCT 1
OCT 11	26.4	4.3	26.0	35.7 50	17.9 69	45 55	36.1	5.1	36.0	8 49	17.8	4.9	18.0	OCT 11
OCT 21	25.0	4.7	25.0	32.5 73	16.3 71	45 63	35.5	4.9	35.5	-8 71	15.4	7.5	15.0	OCT 21
NOV 1	21.5	5.3	21.0	31.1 62	12.1 61	43 54	33.3	5.3	33.0	-9 59	9.0	9.1	10.0	NOV 1
NOV 11	19.1	8.7	21.0	32.3 54	-4.3 55	38 52	31.3	3.3	32.0	-38 59	4.5	14.2	7.0	NOV 11
NOV 21	17.1	6.0	18.0	28.0 49	1.9 52	39 49	31.0	4.1	32.0	-25 58	-0.8	11.0	0.0	NOV 21
DEC 1	13.3	9.1	14.5	25.5 65	-18.7 72	38 75	29.5	4.6	29.5	-38 72	-4.7	13.8	-0.5	DEC 1
DEC 11	12.6	9.7	13.0	30.1 62	-6.0 64	34 77	27.1	5.7	28.0	-39 64	-5.5	15.2	-1.0	DEC 11
DEC 21	10.9	10.1	12.0	28.0 50	-12.5 51	34 50	27.2	5.9	29.0	-43 78	-9.2	14.0	-1.0	DEC 21
MONTH														MONTH
JAN	6.6	8.6	7.0	23.7 53	-13.8 49	36 74	31.2	3.5	32.0	-46 57	-27.3	13.2	-1.0	JAN
FEB	12.3	5.1	12.0	24.1 61	1.7 49	39 63	32.0	2.7	32.0	-40 56	-17.6	13.2	-1.0	FEB
MAR	15.7	4.6	15.0	23.7 72	4.3 65	36 72	33.2	1.8	34.0	-38 60	-13.3	13.0	-1.0	MAR
APR	25.1	2.3	25.0	29.0 69	18.5 75	43 59	36.9	2.9	37.0	-9 51	10.8	7.1	12.0	APR
MAY	32.0	1.4	31.5	34.4 58	29.5 59	49 61	44.0	3.6	44.0	-5 54	20.6	5.4	21.0	MAY
JUN	38.5	1.9	38.0	42.6 70	34.9 51	59 52	51.0	3.3	51.0	21 51	27.8	2.5	28.0	JUN
JUL	40.9	1.7	40.0	44.9 75	38.1 69	62 67	53.4	3.5	53.0	27 73	30.2	2.7	30.0	JUL
AUG	39.2	2.4	38.0	44.5 76	33.7 55	58 71	50.7	3.4	51.0	26 73	28.7	2.2	29.0	AUG
SEP	32.8	2.4	32.0	37.6 59	29.3 62	60 67	47.1	4.2	47.0	14 57	21.8	3.9	22.0	SEP
OCT	26.5	3.1	27.0	31.8 50	21.3 76	47 51	39.7	4.0	40.0	-8 71	13.1	6.4	12.0	OCT
NOV	19.3	4.5	19.0	27.0 54	10.1 59	43 54	35.3	3.4	35.0	-38 59	-6.0	11.9	-1.0	NOV
DEC	12.2	5.9	12.0	22.6 62	-1.8 78	38 75	31.9	3.1	32.0	-43 78	-18.1	12.5	-1.0	DEC

(con.)

Table 30. (Con.)

MAXIMUM DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 247978 SUMMIT

1949-1978

PRD. BEGINS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS					10-DAY AND MONTHLY EXTREMES								
JAN 1	21.9	7.1	22.0	33.1 61	8.7 50	46 61	34.6	7.2	33.0	-24 66	3.9	13.8	5.0	JAN 1
JAN 11	22.6	9.5	24.0	37.0 61	0.8 50	48 61	34.7	8.6	35.0	-24 50	4.4	15.9	5.0	JAN 11
JAN 21	21.8	10.4	25.0	33.9 53	-3.1 69	48 68	35.1	8.0	35.0	-25 50	2.9	16.0	4.0	JAN 21
FEB 1	29.4	7.4	28.5	42.6 63	6.5 75	53 62	40.9	5.7	41.5	-12 75	15.4	11.8	17.0	FEB 1
FEB 11	29.3	5.3	29.0	41.6 77	16.5 56	56 58	40.2	6.5	40.5	-16 56	14.7	12.9	16.5	FEB 11
FEB 21	30.1	9.3	30.5	45.9 73	-2.8 62	54 58	38.9	9.1	40.0	-12 62	19.1	13.4	23.5	FEB 21
MAR 1	29.5	7.9	29.5	46.4 68	2.4 51	57 72	42.1	7.6	42.0	-21 51	12.5	14.1	14.0	MAR 1
MAR 11	33.9	6.0	33.5	46.9 72	22.6 65	60 60	45.4	7.5	45.5	-3 65	22.2	10.1	25.0	MAR 11
MAR 21	37.0	7.6	37.5	50.0 60	19.4 75	62 60	49.1	7.4	50.0	-7 55	24.0	12.1	28.0	MAR 21
APR 1	43.0	6.2	43.0	54.1 76	24.0 75	65 77	53.2	6.6	53.0	-2 54	31.2	9.9	34.0	APR 1
APR 11	43.6	6.4	42.0	62.2 62	33.3 53	72 62	54.8	7.3	54.0	17 53	31.5	7.3	33.0	APR 11
APR 21	45.4	7.7	45.0	62.0 52	28.0 54	74 77	57.4	8.4	55.0	14 54	32.8	7.6	33.5	APR 21
MAY 1	50.8	6.4	49.5	63.9 66	39.6 56	76 49	61.8	7.5	60.0	18 54	37.9	7.9	38.0	MAY 1
MAY 11	55.7	5.6	55.0	65.6 49	41.4 66	76 49	66.5	5.7	65.5	28 55	41.7	6.7	42.0	MAY 11
MAY 21	58.3	6.0	57.0	73.3 58	46.5 78	78 72	69.1	5.8	69.0	34 51	45.8	7.2	45.0	MAY 21
JUN 1	62.0	6.5	59.0	74.3 70	52.4 50	84 77	71.9	6.6	70.0	33 50	49.5	7.6	50.0	JUN 1
JUN 11	63.7	6.4	62.0	81.2 74	55.4 54	88 68	75.0	6.2	75.0	38 73	51.6	7.7	50.0	JUN 11
JUN 21	64.9	5.4	64.0	75.5 74	55.6 69	86 74	75.9	5.7	76.5	40 51	51.4	6.8	51.0	JUN 21
JUL 1	69.7	5.3	70.0	79.5 70	57.4 55	86 54	79.0	4.6	80.0	44 56	59.0	6.9	60.0	JUL 1
JUL 11	72.8	5.3	72.0	85.7 60	65.2 72	93 60	81.8	5.4	83.0	46 71	61.2	7.7	62.0	JUL 11
JUL 21	74.6	3.8	74.0	83.7 60	68.5 49	91 60	82.9	3.4	83.0	49 75	64.3	6.8	65.0	JUL 21
AUG 1	74.1	5.2	73.0	84.9 61	63.7 75	96 61	83.6	5.1	84.0	50 78	62.3	6.9	63.0	AUG 1
AUG 11	72.7	6.6	72.0	85.9 67	59.2 78	90 61	80.2	4.8	80.0	46 78	62.0	8.9	63.0	AUG 11
AUG 21	67.8	6.7	67.0	79.2 70	57.2 64	96 69	80.1	6.4	82.0	43 65	54.6	8.1	52.0	AUG 21
SEP 1	64.9	6.8	63.5	77.8 67	45.7 64	92 67	77.5	7.1	79.0	35 64	50.1	7.7	51.0	SEP 1
SEP 11	58.9	7.0	59.5	70.1 60	40.6 65	85 59	72.2	8.5	73.0	20 70	43.4	9.1	43.0	SEP 11
SEP 21	56.8	9.6	56.0	73.0 63	40.3 61	82 57	68.8	9.2	70.5	21 65	42.8	10.6	43.0	SEP 21
OCT 1	52.2	6.9	52.0	63.9 52	40.4 59	82 57	66.8	7.2	67.0	20 57	37.8	9.2	37.0	OCT 1
OCT 11	48.9	7.1	50.0	61.8 63	34.5 51	71 63	61.2	7.5	63.5	19 51	35.4	7.7	36.0	OCT 11
OCT 21	43.4	6.7	43.0	56.2 52	31.7 61	67 52	56.1	6.3	57.0	16 71	31.7	8.4	32.0	OCT 21
NOV 1	38.1	7.3	37.0	51.2 49	10.7 73	64 75	49.8	6.4	49.0	-5 73	25.5	10.2	28.0	NOV 1
NOV 11	31.5	7.5	32.0	43.0 49	7.7 55	55 49	42.2	6.2	42.0	-16 55	20.4	12.7	23.0	NOV 11
NOV 21	29.8	5.0	30.5	40.0 49	20.4 75	53 50	41.2	5.8	42.0	0 75	16.1	9.1	18.0	NOV 21
DEC 1	27.6	7.2	28.0	39.6 65	4.9 72	49 59	40.0	5.4	40.0	-21 56	14.7	12.9	19.0	DEC 1
DEC 11	25.9	8.1	27.5	37.4 76	8.7 64	49 60	37.4	6.1	38.5	-24 64	13.3	15.0	19.0	DEC 11
DEC 21	25.9	7.2	26.5	36.1 50	2.3 68	47 54	37.6	5.4	36.5	-31 68	13.0	12.5	16.0	DEC 21
MONTH														MONTH
JAN	22.1	6.4	22.0	32.4 58	4.0 50	48 68	41.0	4.6	41.0	-25 50	-6.7	13.5	-1.0	JAN
FEB	29.5	4.6	29.0	37.6 63	20.9 75	56 58	45.7	4.3	45.0	-16 56	7.6	12.5	8.5	FEB
MAR	33.6	5.2	33.0	43.2 68	24.5 75	62 60	51.3	5.3	51.0	-21 51	8.4	13.5	10.0	MAR
APR	44.0	4.7	43.0	52.9 52	34.9 75	74 77	60.7	7.4	60.0	-2 54	25.5	8.3	26.5	APR
MAY	55.0	4.2	54.5	66.6 58	49.2 75	78 72	71.1	4.9	72.0	18 54	35.2	6.0	36.0	MAY
JUN	63.5	4.3	62.5	74.5 61	57.1 51	88 68	79.7	4.4	79.5	33 50	45.3	6.0	45.5	JUN
JUL	72.5	2.8	71.0	82.2 60	67.4 58	93 60	84.5	3.4	84.0	44 56	55.2	6.1	54.0	JUL
AUG	71.4	5.1	70.0	82.8 61	62.3 75	96 69	85.3	4.6	85.0	43 65	53.4	7.6	52.0	AUG
SEP	60.2	5.7	59.0	71.2 67	45.4 65	92 67	79.1	6.2	80.0	20 70	37.4	8.8	36.0	SEP
OCT	48.2	4.7	47.0	61.9 53	40.8 51	82 57	68.7	5.0	68.0	16 71	28.7	7.0	29.5	OCT
NOV	33.2	4.7	33.0	44.7 49	21.8 73	64 75	50.7	5.6	50.0	-16 55	12.2	10.9	14.0	NOV
DEC	26.5	4.3	27.0	32.5 50	19.1 68	49 60	42.3	5.2	43.5	-31 68	1.7	14.7	2.5	DEC

(con.)

Table 30. (Con.)

MINIMUM DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 247978 SUMMIT

1949-1978

PRD. BEGINS	10-DAY AND MONTHLY PERIOD MEANS: MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	10-DAY AND MONTHLY EXTREMES: HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JAN 1	5.7	10.4	8.0	22.4 61	-20.3 73	34 59	23.3	6.8	23.0	-55 59	-18.3	17.3	-1.0	JAN 1
JAN 11	6.1	13.2	8.0	23.5 76	-19.9 54	38 76	24.2	9.2	25.0	-53 54	-17.2	17.4	-1.0	JAN 11
JAN 21	5.3	14.4	9.0	25.9 53	-22.5 69	38 68	24.4	12.1	28.0	-45 63	-19.7	20.1	-1.0	JAN 21
FEB 1	13.5	9.2	13.0	27.3 61	-16.0 75	41 62	27.2	8.0	29.0	-30 76	-5.1	14.0	-1.0	FEB 1
FEB 11	12.8	8.1	13.0	26.2 77	-10.1 49	38 65	27.1	5.6	27.0	-40 56	-10.2	15.5	-1.0	FEB 11
FEB 21	12.7	11.6	14.5	28.3 68	-25.1 62	36 67	25.9	9.9	28.0	-43 62	-4.9	16.9	-1.0	FEB 21
MAR 1	10.0	8.5	9.5	26.2 68	-16.3 51	38 68	26.9	5.8	26.0	-42 60	-14.0	15.0	-1.0	MAR 1
MAR 11	13.9	8.1	14.0	33.4 72	-5.9 67	38 72	28.0	4.8	29.5	-38 65	-6.6	18.0	-1.0	MAR 11
MAR 21	17.9	8.7	19.5	34.8 78	-4.8 65	41 78	30.2	5.1	30.5	-41 65	-1.2	17.2	2.5	MAR 21
APR 1	21.4	4.7	21.5	29.5 49	7.4 75	47 60	33.7	5.0	33.5	-18 54	3.4	10.0	5.0	APR 1
APR 11	23.1	4.9	23.0	30.6 54	8.2 53	43 49	32.3	4.4	32.0	-12 53	10.4	11.5	14.0	APR 11
APR 21	24.3	4.4	24.0	32.0 53	13.5 67	43 65	34.2	4.8	34.0	-18 51	11.4	10.0	12.5	APR 21
MAY 1	28.0	2.8	28.0	33.1 58	21.4 67	43 67	35.8	3.6	35.5	2 67	19.2	5.7	20.5	MAY 1
MAY 11	30.6	2.7	30.5	36.5 56	25.5 66	53 70	40.0	5.2	40.5	12 53	23.3	4.3	24.0	MAY 11
MAY 21	32.5	2.2	32.0	37.4 58	28.5 71	49 69	41.3	3.8	41.0	17 60	23.8	3.7	23.0	MAY 21
JUN 1	35.8	3.2	35.0	41.6 77	28.0 51	54 60	45.6	5.0	46.0	15 51	27.3	3.9	28.0	JUN 1
JUN 11	37.3	2.5	37.0	42.0 74	29.9 69	55 49	45.9	3.5	45.0	18 69	28.6	4.2	29.0	JUN 11
JUN 21	39.0	3.3	39.0	44.4 74	28.9 51	59 70	48.2	5.6	47.5	22 71	30.4	4.2	30.0	JUN 21
JUL 1	40.1	3.7	40.0	48.7 78	31.7 71	58 67	48.3	4.2	47.0	22 71	31.0	4.7	30.0	JUL 1
JUL 11	41.5	3.4	41.0	49.0 55	34.1 62	59 78	51.6	3.8	52.0	25 73	32.8	4.3	33.0	JUL 11
JUL 21	41.1	4.1	39.0	50.0 77	32.5 73	59 75	51.4	4.4	51.0	25 73	31.3	4.4	31.0	JUL 21
AUG 1	41.0	3.2	40.0	50.2 76	35.5 54	60 55	51.5	4.4	52.0	26 77	31.1	4.1	31.0	AUG 1
AUG 11	39.6	3.1	38.0	46.4 78	33.1 51	59 60	49.5	4.6	50.0	21 70	29.9	4.8	30.0	AUG 11
AUG 21	38.5	3.2	38.0	44.7 61	32.7 49	57 58	48.2	4.4	47.0	21 69	29.3	4.3	30.0	AUG 21
SEP 1	35.7	4.3	35.0	46.9 78	27.5 62	58 76	48.0	5.6	48.5	10 62	25.6	5.7	25.0	SEP 1
SEP 11	33.2	4.2	33.0	40.1 66	24.0 50	58 53	45.9	5.9	46.0	6 57	21.7	6.4	22.5	SEP 11
SEP 21	32.7	4.3	32.0	41.7 78	23.0 72	56 76	44.0	6.4	45.0	12 72	22.3	5.4	23.5	SEP 21
OCT 1	30.7	5.1	31.0	40.0 76	20.8 57	54 60	43.9	5.6	44.0	2 70	17.3	7.9	17.0	OCT 1
OCT 11	29.4	4.9	29.0	37.0 55	13.0 69	57 61	40.0	6.3	40.0	2 49	18.3	7.7	19.0	OCT 11
OCT 21	26.2	4.7	26.5	33.8 65	17.5 61	50 66	37.1	5.1	37.0	-6 71	12.0	9.1	12.5	OCT 21
NOV 1	22.6	7.1	22.0	32.6 54	-1.2 73	46 56	34.8	5.4	34.0	-30 51	6.1	14.0	12.0	NOV 1
NOV 11	17.5	9.3	18.0	30.1 54	-12.1 55	40 76	30.5	5.4	31.0	-42 59	-0.1	14.9	-1.0	NOV 11
NOV 21	16.0	7.5	17.0	30.8 49	-0.7 70	40 57	29.7	5.2	29.5	-33 70	-2.0	14.3	-0.5	NOV 21
DEC 1	13.5	8.8	15.0	25.5 65	-14.2 72	39 50	28.7	4.6	30.0	-43 61	-8.7	16.8	-1.0	DEC 1
DEC 11	11.9	10.9	14.5	26.8 76	-12.4 64	37 76	26.5	7.0	27.0	-37 55	-5.7	15.3	-1.0	DEC 11
DEC 21	11.6	10.8	13.0	25.6 50	-19.6 68	38 63	26.2	7.6	26.5	-46 68	-7.2	16.7	-1.0	DEC 21
MONTH														MONTH
JAN	5.7	9.0	6.0	20.3 58	-16.1 50	38 76	30.4	5.3	31.0	-55 59	-29.6	14.5	-1.0	JAN
FEB	13.0	5.8	13.0	23.4 54	2.0 49	41 62	31.6	3.9	32.0	-43 62	-18.7	13.6	-1.0	FEB
MAR	14.1	5.9	12.0	26.2 78	0.1 65	41 78	32.7	3.7	32.0	-42 60	-20.4	14.1	-1.0	MAR
APR	22.9	2.7	22.0	28.1 49	18.1 51	47 60	37.6	3.8	37.0	-18 54	-0.3	10.1	-1.0	APR
MAY	30.4	1.4	29.5	33.6 58	28.1 68	53 70	43.3	3.6	42.0	2 67	17.7	5.3	18.5	MAY
JUN	37.4	1.9	37.0	40.2 74	31.5 51	59 70	51.2	3.8	51.0	15 51	25.3	3.8	26.0	JUN
JUL	40.9	3.0	40.0	46.7 75	35.5 62	59 78	54.1	3.1	54.0	22 71	28.8	2.9	28.0	JUL
AUG	39.7	2.3	38.0	46.5 76	36.5 49	60 55	53.4	3.6	55.0	21 70	27.0	3.4	26.0	AUG
SEP	33.9	3.2	33.0	41.8 78	27.5 65	58 76	50.8	4.8	51.0	6 57	18.4	5.5	18.0	SEP
OCT	26.7	3.0	29.0	33.5 76	22.6 69	57 61	45.8	4.6	45.0	-6 71	9.1	7.7	10.0	OCT
NOV	18.7	5.3	19.0	30.0 49	2.9 55	46 56	36.5	4.1	36.0	-42 59	-8.6	14.4	-1.0	NOV
DEC	12.3	6.0	13.5	21.1 57	1.4 68	39 50	31.9	3.8	31.5	-46 68	-21.3	14.8	-1.0	DEC

(con.)

Table 30. (Con.)

MAXIMUM DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240206 DESERT MTN LO 1951-1970

10-DAY AND MONTHLY PERIOD MEANS								10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	I	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	17	65.7	5.9	67.0	75.7 68	54.7 55 M	I	83 68	75.0	5.0	77.0	44 66	54.8	6.8	53.0	JUL 1
JUL 11	20	71.0	5.0	70.0	81.0 60	61.3 63	I	88 53	78.8	4.3	79.0	45 63	61.4	7.4	62.0	JUL 11
JUL 21	20	72.0	4.2	72.5	78.6 59	64.0 70	I	85 60	79.3	3.4	80.0	49 55	62.2	6.1	63.0	JUL 21
AUG 1	20	71.2	4.8	71.5	80.4 61	61.9 64	I	90 61	79.0	4.4	80.5	47 56	60.9	6.1	62.0	AUG 1
AUG 11	20	71.0	6.0	69.5	83.7 67	61.8 64	I	86 67	76.9	5.3	76.5	43 64	61.6	9.8	62.5	AUG 11
AUG 21	18	64.5	7.5	63.5	76.0 70	52.7 64	I	94 69	76.5	7.8	76.0	41 60	53.1	9.4	50.5	AUG 21
MONTH							I									MONTH
JUL	19	69.9	2.7	69.0	76.9 60 M	67.0 66	I	88 53	81.3	2.9	80.0	44 66	53.3	6.0	52.0	JUL
AUG	18	69.0	5.1	67.5	77.7 61	58.6 64	I	94 69	81.8	5.1	82.0	41 60	52.2	8.6	50.0	AUG

MINIMUM DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240206 DESERT MTN LO 1951-1970

10-DAY AND MONTHLY PERIOD MEANS								10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	I	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	17	45.1	4.8	45.0	54.7 68	36.3 55 M	I	66 68	54.8	5.6	55.0	32 68	36.6	3.4	37.0	JUL 1
JUL 11	20	50.3	4.7	49.5	61.4 60	42.9 68	I	67 60	58.9	5.1	59.5	35 57	41.3	4.9	39.0	JUL 11
JUL 21	20	50.0	3.1	49.0	56.8 60 M	45.6 70	I	64 59	58.4	3.6	58.0	32 59	40.1	4.2	39.0	JUL 21
AUG 1	20	50.4	3.7	51.0	57.2 61	42.4 57	I	73 61	59.3	4.9	59.0	35 57	41.4	3.3	42.0	AUG 1
AUG 11	20	49.9	5.0	49.0	62.6 67	43.0 59	I	65 67	57.4	5.1	58.0	35 66	40.9	5.3	40.0	AUG 11
AUG 21	18	44.8	5.0	43.5	53.3 61	36.8 60 M	I	68 69	55.2	6.8	54.5	31 51	36.3	4.5	35.0	AUG 21
MONTH							I									MONTH
JUL	19	48.8	2.6	48.0	56.5 60 M	45.2 62	I	67 60	61.4	3.5	61.0	32 68	36.1	2.8	37.0	JUL
AUG	18	48.4	3.5	48.0	55.5 61	42.6 64	I	73 61	61.8	4.8	62.0	31 51	35.9	3.9	35.0	AUG

Table 31.--Frequency distribution of daily maximum and minimum temperatures at West Glacier, Polebridge, and Summit; based on years 1949-78 and 24-hour periods ending about 5 p.m., m.s.t. Also, July-August frequencies at Desert Mountain Lookout; based on 1951-70

MAXIMUM DAILY TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES -GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240206 DESERT MTN LO 1951-1970

TEMPERATURE VALUES

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JUL 1										12	24	97	91	218	145	194	176	42					JUL 1
JUL 11											5	15	30	151	206	236	236	95	25				JUL 11
JUL 21											5	5	46	97	162	264	301	106	14				JUL 21
AUG 1											5	20	35	120	225	220	215	135	15	10			AUG 1
AUG 11										5	10	26	20	97	245	260	194	133	10				AUG 11
AUG 21										52	52	78	130	146	156	193	89	83	10	10			AUG 21
MONTH																							MONTH
JUL										3	10	34	53	150	172	234	243	84	14				JUL
AUG										19	22	41	61	121	209	224	167	117	12	7			AUG

MINIMUM DAILY TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES -GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240206 DESERT MTN LO 1951-1970

TEMPERATURE VALUES

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JUL 1								79	152	261	218	127	115	42	6								JUL 1
JUL 11									85	156	226	271	136	106	20								JUL 11
JUL 21								5	65	162	199	310	199	60									JUL 21
AUG 1									60	126	291	221	206	75	10	10							AUG 1
AUG 11									66	184	230	255	143	107	15								AUG 11
AUG 21								83	172	250	198	172	68	52	5								AUG 21
MONTH																							MONTH
JUL								24	97	188	214	245	153	71	9								JUL
AUG								27	99	186	240	216	140	78	10	3							AUG

(con.)

Table 31. (Con.)

MAXIMUM DAILY TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 248809 WEST GLACIER 1949-1978

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JAN 1	7	13	64	87	47	110	187	258	157	60	10												JAN 1
JAN 11	30	27	40	60	50	67	147	280	203	77	20												JAN 11
JAN 21	21	58	55	45	58	76	109	188	285	73	33												JAN 21
FEB 1		3	3	43	47	80	73	237	317	140	50	7											FEB 1
FEB 11		3	3	13	10	40	87	223	380	180	53	7											FEB 11
FEB 21			8	16	32	32	57	162	324	206	146	12	4										FEB 21
MAR 1		3	10	7	23	33	113	160	297	190	113	27	20	3									MAR 1
MAR 11				3	7	10	20	77	243	357	177	90	17										MAR 11
MAR 21				6	9	12	24	21	148	306	197	161	91	24									MAR 21
APR 1						3		3	40	210	253	193	183	80	27	7							APR 1
APR 11								7	60	157	227	217	140	103	63	23	3						APR 11
APR 21								10	10	113	200	210	180	100	100	40	37						APR 21
MAY 1									10	37	110	157	173	173	140	133	47	20					MAY 1
MAY 11										7	67	107	160	143	223	113	137	43					MAY 11
MAY 21											15	67	145	188	209	191	124	48	12				MAY 21
JUN 1											7	43	80	153	223	193	173	87	40				JUN 1
JUN 11											3	17	74	152	195	178	199	111	64	7			JUN 11
JUN 21											3	37	67	110	190	187	143	147	110	7			JUN 21
JUL 1											3	3	17	57	120	187	190	220	167	37			JUL 1
JUL 11													7	20	67	150	173	247	260	73	3		JUL 11
JUL 21													3	30	30	79	176	321	312	48			JUL 21
AUG 1														17	50	123	200	263	253	83	10		AUG 1
AUG 11													20	60	67	90	233	267	177	73	13		AUG 11
AUG 21												30	61	103	152	145	197	167	115	24	6		AUG 21
SEP 1											3	33	67	140	153	210	207	103	60	23			SEP 1
SEP 11									3	17	27	90	153	150	157	210	137	40	17				SEP 11
SEP 21									7	30	83	170	157	113	163	150	97	23	7				SEP 21
OCT 1								3	20	63	140	183	170	167	173	73	7						OCT 1
OCT 11								10	17	83	213	247	193	170	67								OCT 11
OCT 21						3	9	36	97	188	248	230	115	70	3								OCT 21
NOV 1					10	7	27	97	203	347	170	90	40	10									NOV 1
NOV 11		13	13	10	13	17	60	157	353	257	73	23	10										NOV 11
NOV 21				17	20	40	123	263	303	157	53	23											NOV 21
DEC 1	3	13	23	17	43	53	137	330	240	100	23	17											DEC 1
DEC 11	7	10	20	23	63	87	160	253	297	70	10												DEC 11
DEC 21	18	3	6	18	76	79	185	321	161	94	36	3											DEC 21
MONTH																							MONTH
JAN	19	33	53	64	52	84	146	240	217	70	22												JAN
FEB		2	5	25	30	52	73	210	341	174	79	8	1										FEB
MAR		1	3	5	13	18	52	84	227	285	163	95	44	10									MAR
APR						1		7	37	160	227	207	168	94	63	23	13						APR
MAY									3	14	62	109	159	169	191	147	103	38	4				MAY
JUN											4	32	74	138	203	186	172	115	71	4			JUN
JUL											1	1	9	35	71	137	180	265	248	53	1		JUL
AUG												11	28	61	91	120	210	230	180	59	10		AUG
SEP									3	16	38	98	126	134	158	190	147	56	28	8			SEP
OCT						1	3	17	46	114	202	220	158	133	78	24	2						OCT
NOV		4	4	9	14	21	70	172	287	253	99	46	17	3									NOV
DEC	10	9	16	19	61	73	161	302	230	88	24	6											DEC

(con.)

Table 31. (Con.)

MINIMUM DAILY TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 248809 WEST GLACIER 1949-1978

PRO. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRO. BEGINS
JAN 1	194	64	80	161	104	161	147	90															JAN 1
JAN 11	180	63	60	123	97	140	187	133	17														JAN 11
JAN 21	215	73	58	106	115	112	170	145	6														JAN 21
FEB 1	103	43	87	130	140	153	187	157															FEB 1
FEB 11	60	33	93	83	120	143	277	187	3														FEB 11
FEB 21	73	45	57	113	126	186	223	174	4														FEB 21
MAR 1	73	33	73	163	147	180	180	143	7														MAR 1
MAR 11	40	20	53	123	77	223	210	230	23														MAR 11
MAR 21	30	24	12	33	73	188	318	291	30														MAR 21
APR 1		3	7	20	60	180	320	333	77														APR 1
APR 11			3	10	20	173	343	317	117	17													APR 11
APR 21			3		13	83	280	377	183	60													APR 21
MAY 1				3		13	203	297	330	130	20	3											MAY 1
MAY 11							87	313	357	210	30		3										MAY 11
MAY 21							61	188	330	227	164	27	3										MAY 21
JUN 1						3	7	97	243	273	297	63	17										JUN 1
JUN 11							7	51	165	316	354	74	34										JUN 11
JUN 21								27	177	367	233	157	37	3									JUN 21
JUL 1								17	103	303	317	190	63	7									JUL 1
JUL 11								7	73	243	363	200	90	23									JUL 11
JUL 21								6	70	285	339	203	88	9									JUL 21
AUG 1									70	240	360	247	70	13									AUG 1
AUG 11								10	120	320	303	197	40	10									AUG 11
AUG 21								39	167	324	267	155	42	6									AUG 21
SEP 1							23	140	257	300	173	77	27		3								SEP 1
SEP 11					3	17	93	210	270	177	173	47	10										SEP 11
SEP 21						7	107	270	293	207	100	10	3	3									SEP 21
OCT 1					3	43	193	357	213	140	43	7											OCT 1
OCT 11					20	90	273	277	210	120	10												OCT 11
OCT 21		3		3	48	155	245	318	133	88	6												OCT 21
NOV 1		3	17	43	107	183	273	243	110	20													NOV 1
NOV 11	37	30	37	43	73	143	247	290	97	3													NOV 11
NOV 21	17	20	43	110	100	223	233	220	30	3													NOV 21
DEC 1	70	27	67	100	120	183	257	163	13														DEC 1
DEC 11	70	70	67	107	100	193	187	200	7														DEC 11
DEC 21	79	45	61	148	139	152	212	161	3														DEC 21
MONTH																							MONTH
JAN	197	67	66	129	105	137	168	124	8														JAN
FEB	79	40	80	109	129	159	229	172	2														FEB
MAR	47	26	45	104	98	197	239	224	20														MAR
APR		1	4	10	31	146	314	342	126	26													APR
MAY				1		4	115	263	339	190	74	11	2										MAY
JUN						1	4	58	195	319	294	98	29	1									JUN
JUL								10	82	277	340	198	81	13									JUL
AUG								17	120	296	309	198	51	10									AUG
SEP					1	8	74	207	273	228	149	44	13	1	1								SEP
OCT		1		1	25	98	238	317	184	115	19	2											OCT
NOV	18	18	32	66	93	183	251	251	79	9													NOV
DEC	73	47	65	119	120	175	218	174	8														DEC

(con.)

Table 31. (Con.)

MAXIMUM DAILY TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 246615 POLEBRIDGE

1949-1978

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JAN 1	14	10	66	114	69	97	190	190	155	86	7	3											JAN 1
JAN 11	41	28	34	86	45	83	172	186	183	117	24												JAN 11
JAN 21	19	66	53	44	66	78	116	176	251	78	50	3											JAN 21
FEB 1		3	14	31	59	55	117	152	255	210	55	41	7										FEB 1
FEB 11		3		7	17	31	97	148	359	217	100	21											FEB 11
FEB 21			13	25	21	25	46	143	286	214	172	50	4										FEB 21
MAR 1		3	14	10	28	34	97	138	234	241	145	31	21	3									MAR 1
MAR 11				3	10	10	21	83	238	293	214	83	41	3									MAR 11
MAR 21			3	3	3	16	28	41	110	277	255	123	88	47	6								MAR 21
APR 1						4	4	14	32	146	304	168	193	86	43	7							APR 1
APR 11								11	47	115	280	172	161	122	57	29	7						APR 11
APR 21							4	7	29	114	218	207	132	129	89	43	18	11					APR 21
MAY 1									3	43	113	180	177	133	150	117	63	17	3				MAY 1
MAY 11										7	60	110	153	157	200	150	117	47					MAY 11
MAY 21										6	27	67	145	185	191	188	118	58	15				MAY 21
JUN 1											7	30	67	197	187	201	177	87	47				JUN 1
JUN 11										3		17	57	157	233	173	173	113	60	13			JUN 11
JUN 21											3	20	64	134	164	187	164	157	100	7			JUN 21
JUL 1												3	10	69	90	173	225	218	149	59	3		JUL 1
JUL 11													10	17	52	152	183	231	241	97	14	3	JUL 11
JUL 21													6	16	56	41	176	251	326	103	25		JUL 21
AUG 1													3	13	33	113	173	237	243	153	27	3	AUG 1
AUG 11													7	63	63	93	193	257	200	90	33		AUG 11
AUG 21												9	64	61	179	161	179	158	103	70	12	6	AUG 21
SEP 1												20	53	123	143	183	210	103	113	40	10		SEP 1
SEP 11									3	13	23	57	113	173	160	170	150	107	23	7			SEP 11
SEP 21										37	93	90	137	127	123	163	133	73	20	3			SEP 21
OCT 1									24	59	110	138	176	134	141	145	69		3				OCT 1
OCT 11								10	31	79	183	190	183	141	141	41							OCT 11
OCT 21						3	13	42	104	162	244	185	136	91	16	3							OCT 21
NOV 1				3	7	10	31	76	166	266	252	86	79	24									NOV 1
NOV 11		17	7	14	14	21	55	186	303	231	117	31	3										NOV 11
NOV 21				24	21	66	128	246	239	180	66	28	3										NOV 21
DEC 1	13	17	23	13	33	57	151	281	254	104	43	10											DEC 1
DEC 11	7	20	17	33	70	103	150	237	217	127	17	3											DEC 11
DEC 21	18	9	15	52	49	131	155	219	237	88	27												DEC 21
MONTH																							MONTH
JAN	24	36	51	80	60	86	158	184	198	93	28	2											JAN
FEB		2	9	21	33	38	89	148	301	214	105	37	4										FEB
MAR		1	6	6	13	20	48	86	192	271	206	80	51	19	2								MAR
APR						1	2	11	36	125	267	182	162	112	63	26	8	4					APR
MAY									1	18	66	117	158	159	181	153	100	41	6				MAY
JUN										1	3	22	62	163	195	187	171	119	69	7			JUN
JUL												1	9	33	66	119	194	234	242	87	14	1	JUL
AUG												3	26	46	95	124	182	215	180	103	24	3	AUG
SEP									1	17	39	56	101	141	142	172	164	94	52	17	3		SEP
OCT						1	5	18	54	101	180	171	164	122	98	62	23		1				OCT
NOV		6	2	14	14	32	71	169	236	226	145	48	29	8									NOV
DEC	13	15	18	33	51	98	152	245	236	106	29	4											DEC

(con.)

Table 31. (Con.)

MINIMUM DAILY TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 246615 POLEBRIDGE 1949-1978

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JAN 1	345	66	103	124	121	117	76	48															JAN 1
JAN 11	297	66	76	117	121	90	110	103	21														JAN 11
JAN 21	320	72	78	119	88	110	129	85															JAN 21
FEB 1	183	114	138	124	114	117	124	72	14														FEB 1
FEB 11	138	100	83	128	117	155	190	90															FEB 11
FEB 21	164	118	101	118	122	122	185	63	8														FEB 21
MAR 1	193	110	107	162	114	114	107	86	7														MAR 1
MAR 11	117	66	83	131	176	179	134	97	17														MAR 11
MAR 21	60	28	38	82	147	210	257	166	13														MAR 21
APR 1	7	14	21	79	146	243	261	196	29	4													APR 1
APR 11	7		7	50	125	232	314	200	64														APR 11
APR 21	4		4	14	82	214	339	229	96	18													APR 21
MAY 1	3		3		17	133	330	317	153	43													MAY 1
MAY 11					3	47	263	353	260	67	7												MAY 11
MAY 21						48	179	315	258	142	58												MAY 21
JUN 1						7	97	237	250	240	123	40	7										JUN 1
JUN 11						7	60	220	270	277	133	27	7										JUN 11
JUN 21						3	40	190	283	283	167	30	3										JUN 21
JUL 1							38	107	329	273	204	45		3									JUL 1
JUL 11							10	90	262	321	214	79	21	3									JUL 11
JUL 21							16	122	292	304	179	72	16										JUL 21
AUG 1							7	147	280	290	193	60	23										AUG 1
AUG 11							47	193	353	247	100	60											AUG 11
AUG 21							91	185	309	245	130	36	3										AUG 21
SEP 1					7	27	163	320	237	143	87	17											SEP 1
SEP 11				3	30	84	264	261	194	104	47	13											SEP 11
SEP 21					17	103	317	263	183	87	27			3									SEP 21
OCT 1				7	86	210	303	210	110	66	7												OCT 1
OCT 11			7	38	138	210	262	200	100	41	3												OCT 11
OCT 21	6	3	13	101	107	198	266	188	84	29	3												OCT 21
NOV 1	10	52	45	110	166	203	197	166	38	14													NOV 1
NOV 11	86	59	55	93	117	128	279	155	28														NOV 11
NOV 21	100	48	72	134	155	186	162	117	24														NOV 21
DEC 1	140	100	97	117	140	140	154	100	10														DEC 1
DEC 11	180	100	97	123	123	120	127	130															DEC 11
DEC 21	220	73	104	125	149	107	134	88															DEC 21
MONTH																							MONTH
JAN	320	68	86	120	109	106	106	79	7														JAN
FEB	161	110	108	123	117	132	165	76	7														FEB
MAR	121	67	75	123	146	169	169	118	12														MAR
APR	6	5	11	48	118	230	305	208	63	7													APR
MAY	1		1		6	75	255	328	225	86	23												MAY
JUN						6	66	216	268	267	141	32	6										JUN
JUL							21	107	294	300	198	66	12	2									JUL
AUG							49	175	314	260	141	52	9										AUG
SEP				1	18	71	248	281	205	111	53	10		1									SEP
OCT	2	1	7	50	110	206	277	199	98	45	5												OCT
NOV	66	53	57	113	146	172	213	146	30	5													NOV
DEC	181	91	99	122	138	122	138	106	3														DEC

(con.)

Table 31. (Con.)

MAXIMUM DAILY TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 247978 SUMMIT

1949-1978

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JAN 1	52	41	59	72	110	166	228	145	83	31	14												JAN 1
JAN 11	93	17	41	62	93	169	155	200	90	62	17												JAN 11
JAN 21	107	38	78	47	72	110	172	229	75	53	19												JAN 21
FEB 1	17	27	20	40	50	87	200	223	190	80	57	10											FEB 1
FEB 11	17	17	23	23	43	90	227	287	133	100	27	10	3										FEB 11
FEB 21	32	12	40	16	12	109	174	231	178	121	61	12											FEB 21
MAR 1	40	10	13	47	60	93	133	230	163	143	23	33	10										MAR 1
MAR 11	7	3	10	27	37	50	120	267	223	127	70	43	13	3									MAR 11
MAR 21	9	9	18	18	15	24	88	188	197	185	127	82	33	6									MAR 21
APR 1	3			3	3	23	50	67	167	237	207	133	80	23	3								APR 1
APR 11					13	23	27	97	187	227	123	157	73	40	20	13							APR 11
APR 21				7		20	37	90	157	163	160	170	87	63	27	20							APR 21
MAY 1					3		13	37	83	140	157	193	160	130	53	17	13						MAY 1
MAY 11							7	17	53	77	113	147	217	160	117	77	17						MAY 11
MAY 21								3	9	66	110	160	204	182	132	91	44						MAY 21
JUN 1								7	10	17	70	127	170	173	203	100	83	40					JUN 1
JUN 11									3	10	50	123	163	177	190	137	80	47	20				JUN 11
JUN 21										20	50	80	143	177	187	177	90	63	13				JUN 21
JUL 1										7	3	48	76	121	183	255	186	110	10				JUL 1
JUL 11											3	24	24	93	166	259	217	145	52	17			JUL 11
JUL 21											3	6	25	47	116	219	326	213	38	6			JUL 21
AUG 1												17	28	100	128	224	207	193	83	17	3		AUG 1
AUG 11											10	14	62	83	152	200	252	145	72	10			AUG 11
AUG 21										9	28	94	94	160	135	185	141	116	34		3		AUG 21
SEP 1									17	23	40	97	143	130	193	147	113	80	7	10			SEP 1
SEP 11						7	3	7	33	63	100	173	117	130	143	137	60	23	3				SEP 11
SEP 21						3	7	37	53	117	93	143	110	107	120	107	83	20					SEP 21
OCT 1						20	13	37	97	83	153	147	123	133	133	53	3	3					OCT 1
OCT 11					7	10	20	37	147	177	103	153	137	127	73	10							OCT 11
OCT 21					9	19	56	116	185	144	144	166	100	50	9								OCT 21
NOV 1	7	10		14	21	38	72	134	255	179	138	83	38	10									NOV 1
NOV 11	17	21	7	24	14	87	163	256	204	111	80	14	3										NOV 11
NOV 21		14	25	32	29	161	186	246	161	93	36	18											NOV 21
DEC 1	48	19	15	22	48	130	233	204	152	96	33												DEC 1
DEC 11	32	14	39	64	75	125	221	189	175	46	18												DEC 11
DEC 21	26	16	10	42	101	195	192	237	104	62	16												DEC 21
MONTH																							MONTH
JAN	85	32	60	60	91	147	185	192	82	49	17												JAN
FEB	21	19	27	27	37	94	202	248	166	99	47	11	1										FEB
MAR	18	8	14	30	37	55	113	227	195	153	75	54	19	3									MAR
APR	1			3	6	22	38	84	170	209	163	153	80	42	17	11							APR
MAY					1		7	18	48	94	126	166	194	158	101	62	25						MAY
JUN								2	4	16	57	110	159	176	193	138	84	50	11				JUN
JUL										2	3	26	41	86	154	244	246	158	33	8			JUL
AUG										3	13	43	62	116	138	202	198	150	62	9	2		AUG
SEP						3	3	14	34	68	78	138	123	122	152	130	86	41	3	3			SEP
OCT					5	16	30	64	144	135	134	156	120	102	71	21	1	1					OCT
NOV	8	15	10	23	21	94	140	212	207	128	85	38	14	3									NOV
DEC	35	16	21	43	76	152	214	211	142	68	22												DEC

(con.)

Table 31. (Con.)

MINIMUM OAILY TEMPERATURE

PERCENTAGE FREQUENCY OISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, OECIMAL POINT OMITTEO

STATION NUMBER 247978 SUMMIT

1949-1978

PRO. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 ANO ABOVE	PRO. BEGINS
JAN 1	321	62	79	148	148	138	66	38															JAN 1
JAN 11	355	62	55	62	145	159	90	62	10														JAN 11
JAN 21	348	60	56	82	113	157	110	60	16														JAN 21
FEB 1	180	57	83	107	153	170	147	90	7	7													FEB 1
FEB 11	183	63	87	77	137	253	123	70	7														FEB 11
FEB 21	190	40	93	109	138	194	134	89	12														FEB 21
MAR 1	223	97	80	117	120	210	93	43	17														MAR 1
MAR 11	157	67	60	110	207	170	120	100	10														MAR 11
MAR 21	100	39	48	88	106	288	182	109	33	6													MAR 21
APR 1	53	23	43	80	140	220	243	150	30	13	3												APR 1
APR 11	30	13	27	50	100	280	313	150	27	10													APR 11
APR 21	13	10	30	60	120	213	283	193	60	17													APR 21
MAY 1		3	13	17	37	163	323	320	97	27													MAY 1
MAY 11				7	20	90	353	273	167	70	17	3											MAY 11
MAY 21					13	66	229	335	226	103	28												MAY 21
JUN 1					3	30	148	265	285	164	67	37											JUN 1
JUN 11					7	7	80	227	328	251	80	17	3										JUN 11
JUN 21						10	51	195	269	283	148	30	13										JUN 21
JUL 1						3	55	138	245	297	200	55	7										JUL 1
JUL 11							28	125	226	299	201	97	24										JUL 11
JUL 21							54	155	215	247	209	92	28										JUL 21
AUG 1							62	159	193	245	221	79	38	3									AUG 1
AUG 11						10	66	183	214	279	166	69	14										AUG 11
AUG 21						19	103	163	229	295	132	44	16										AUG 21
SEP 1				3	13	47	157	257	217	143	100	43	20										SEP 1
SEP 11			7	13	47	80	173	233	220	140	53	23	10										SEP 11
SEP 21				7	43	123	187	240	173	110	93	20	3										SEP 21
OCT 1		10	7	31	86	103	200	217	148	128	48	21											OCT 1
OCT 11		14	10	34	55	86	279	269	145	72	31		3										OCT 11
OCT 21	10	10	29	52	97	156	269	211	97	65		3											OCT 21
NOV 1	59	38	28	93	52	169	272	176	79	31	3												NOV 1
NOV 11	100	42	62	111	111	228	194	114	35	3													NOV 11
NOV 21	121	64	43	132	150	218	157	86	25	4													NOV 21
OEC 1	170	56	59	130	144	196	156	78	11														OEC 1
OEC 11	193	64	93	132	150	157	125	68	18														OEC 11
OEC 21	182	71	84	143	133	227	84	62	13														OEC 21
MONTH																							MONTH
JAN	341	61	63	97	135	151	89	53	9														JAN
FEB	184	54	87	97	143	207	135	83	8	2													FEB
MAR	158	67	62	104	143	225	133	85	20	2													MAR
APR	32	16	33	63	120	238	280	164	39	13	1												APR
MAY		1	4	8	23	106	300	310	164	67	15	1											MAY
JUN					3	16	93	229	294	233	98	28	6										JUN
JUL						1	46	140	228	280	204	82	20										JUL
AUG						10	78	168	212	274	171	63	22	1									AUG
SEP			2	8	34	83	172	243	203	131	82	29	11										SEP
OCT	3	11	16	39	80	116	250	232	130	88	26	8	1										OCT
NOV	93	48	44	112	104	205	208	126	47	13	1												NOV
DEC	182	64	79	135	142	195	120	69	14														DEC

Table 32.--Mean temperature statistics; based on arithmetic average of daily maximum and minimum temperatures (table 30)

MEAN DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, ANO EXTREME VALUES

STATIDN NUMBER 248809 WEST GLACIER

1949-1978

PRD. BEGINS	10-DAY ANO MONTHLY PERIOD MEANS: MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	10-DAY AND MONTHLY EXTREMES: HIGH,YR	AVG. HIGH	STO. DEV.	MEDIAN HIGH	LOW,YR	AVG. LDW	STD. DEV.	MEDIAN LDW	PRD. BEGINS
JAN 1	19.5	7.7	20.5	33.4 54	2.8 74	40 53	31.0	5.9	32.5	-14 59	4.1	10.9	4.5	JAN 1
JAN 11	21.2	9.7	24.0	34.4 53	-1.6 50	42 74	31.7	6.9	33.0	-18 54	6.6	13.9	5.5	JAN 11
JAN 21	20.1	10.3	22.0	34.2 53	-0.7 57	40 71	31.5	8.2	34.0	-19 50	4.5	14.1	7.5	JAN 21
FEB 1	24.9	6.9	26.0	34.9 52	5.9 75	43 63	34.3	5.1	34.5	-16 50	11.5	12.2	12.0	FEB 1
FEB 11	27.5	5.2	28.0	36.7 77	15.1 56	40 77	35.6	2.7	36.0	-14 56	16.2	10.1	17.0	FEB 11
FEB 21	27.8	7.0	29.0	36.8 68	6.3 62	44 50	35.4	5.2	37.0	-5 62	18.8	10.5	20.5	FEB 21
MAR 1	27.2	5.4	27.0	39.2 68	9.4 51	46 68	36.4	4.1	36.5	-8 60	15.2	9.5	15.5	MAR 1
MAR 11	31.4	4.2	31.5	40.2 72	22.4 65	44 76	38.9	2.9	39.0	0 56	21.1	9.2	23.0	MAR 11
MAR 21	34.6	5.5	35.0	43.4 78	20.4 55	48 78	41.3	3.2	41.5	0 55	25.9	10.5	29.0	MAR 21
APR 1	38.6	3.1	38.0	44.3 60	29.3 75	54 77	44.5	3.6	44.0	11 54	31.4	5.3	33.0	APR 1
APR 11	40.1	3.1	39.5	46.9 62	35.3 53	58 62	47.3	4.5	47.5	18 51	33.2	4.6	34.0	APR 11
APR 21	42.8	3.8	42.0	51.9 77	34.2 54	58 52	49.5	4.6	49.5	24 51	35.8	4.9	36.0	APR 21
MAY 1	47.1	3.7	46.0	55.5 66	42.2 50	61 66	53.6	3.7	54.5	26 54	39.8	5.2	39.0	MAY 1
MAY 11	50.1	3.2	49.0	56.6 49	42.2 74	67 70	57.1	3.7	57.0	38 74	42.9	3.7	42.0	MAY 11
MAY 21	52.5	3.8	51.5	63.0 58	46.1 55	67 56	60.0	3.9	60.0	40 78	45.1	4.0	44.5	MAY 21
JUN 1	55.7	3.7	54.5	62.6 70	48.9 51	70 77	62.1	4.0	62.0	41 66	48.2	3.8	48.5	JUN 1
JUN 11	57.3	3.4	57.0	66.6 74	51.6 54	73 61	64.1	3.7	63.5	42 54	49.8	3.8	49.0	JUN 11
JUN 21	58.0	3.4	56.5	64.9 70	52.9 51	73 68	65.9	4.4	67.0	41 71	49.7	4.5	49.5	JUN 21
JUL 1	61.3	3.5	61.0	70.6 75	53.0 55	75 75	67.9	3.1	68.0	42 55	54.3	4.6	54.0	JUL 1
JUL 11	63.7	3.1	63.0	69.8 60	58.1 72	79 67	70.2	3.8	71.0	50 72	56.4	3.5	56.0	JUL 11
JUL 21	64.0	2.3	64.0	68.5 56	59.8 54	74 74	69.7	2.5	70.0	50 52	56.7	3.2	56.5	JUL 21
AUG 1	64.1	2.6	63.5	71.1 71	58.9 64	75 52	69.5	3.1	70.0	53 64	57.7	3.3	57.0	AUG 1
AUG 11	62.3	3.6	62.0	70.1 67	54.4 68	76 67	67.8	3.6	67.0	49 76	56.5	4.2	56.5	AUG 11
AUG 21	59.1	3.8	58.0	65.6 67	51.5 60	78 69	66.4	4.2	66.0	45 65	51.8	4.4	51.5	AUG 21
SEP 1	56.3	4.2	55.5	67.6 67	49.2 64	80 67	63.2	5.9	64.5	39 62	48.7	4.3	48.0	SEP 1
SEP 11	51.8	4.4	51.5	59.4 66	39.6 65	67 58	59.9	5.5	62.0	34 65	44.4	5.3	45.0	SEP 11
SEP 21	49.3	5.0	48.5	60.2 67	40.4 72	73 67	56.1	6.3	56.5	32 72	42.1	.5.2	42.0	SEP 21
OCT 1	45.4	3.3	45.0	51.1 65	39.3 59	60 57	53.0	3.3	52.5	30 57	38.3	4.4	38.0	OCT 1
DCT 11	42.5	3.4	43.0	47.4 63	34.9 69	56 50	48.1	4.3	48.0	25 51	36.1	4.1	37.5	OCT 11
OCT 21	38.7	3.7	39.0	44.5 65	31.3 61	54 77	46.4	4.9	46.5	15 71	31.5	5.5	32.5	OCT 21
NOV 1	34.2	4.2	34.5	40.5 75	23.3 73	52 75	41.4	4.7	41.0	13 73	26.4	7.0	29.0	NOV 1
NOV 11	30.4	7.1	31.5	39.1 54	7.9 55	46 56	38.1	4.5	38.0	-10 59	21.2	10.5	24.5	NOV 11
NDV 21	28.6	4.0	28.5	36.6 49	20.7 75	47 62	37.3	4.3	37.0	0 77	17.7	8.0	19.0	NDV 21
DEC 1	25.7	6.5	27.0	34.4 65	1.6 72	43 75	35.3	3.8	35.0	-14 72	14.4	10.7	16.5	OEC 1
DEC 11	24.5	7.5	25.0	34.9 62	8.6 64	39 62	33.6	3.6	34.5	-19 64	14.1	11.8	15.5	OEC 11
OEC 21	24.1	7.1	25.5	33.4 50	3.6 68	40 58	33.8	5.0	34.5	-22 68	11.6	11.2	12.5	DEC 21
MONTH														MONTH
JAN	20.3	6.6	20.5	32.0 53	4.8 50	42 74	36.4	3.2	36.0	-19 50	-2.7	10.8	-1.0	JAN
FEB	26.6	3.8	26.5	32.8 61	19.0 49	44 50	38.0	2.6	38.0	-16 50	6.6	11.1	5.5	FEB
MAR	31.2	3.6	30.5	38.8 68	23.5 55	48 78	42.1	2.5	42.0	-8 60	12.7	10.1	12.5	MAR
APR	40.5	2.4	40.0	44.4 77	35.7 54	58 62	50.8	4.2	50.0	11 54	29.7	5.5	30.5	APR
MAY	50.0	2.4	49.0	57.4 58	46.1 55	67 70	60.7	3.5	60.0	26 54	38.5	3.8	39.0	MAY
JUN	57.0	2.3	56.5	62.6 61	52.6 51	73 68	67.8	3.4	68.0	41 71	46.1	2.9	47.0	JUN
JUL	63.0	1.6	62.0	67.7 75	60.2 72	79 67	71.8	2.6	71.0	42 55	52.4	3.2	53.0	JUL
AUG	61.7	2.6	61.0	66.7 67	56.6 64	78 69	70.8	3.2	70.5	45 65	51.3	3.7	51.5	AUG
SEP	52.5	3.5	52.0	61.7 67	44.3 65	80 67	64.4	5.2	65.0	32 72	40.2	4.5	39.0	SEP
OCT	42.1	2.2	42.0	46.3 65	38.3 70	60 57	53.6	2.8	53.0	15 71	30.9	5.2	32.0	OCT
NOV	31.0	3.4	30.5	37.0 54	22.1 55	52 75	42.9	3.7	42.5	-10 59	14.5	9.3	16.5	NDV
OEC	24.7	4.2	25.5	30.6 62	16.7 51	43 75	37.2	2.9	37.5	-22 68	4.5	11.6	6.0	DEC

(con.)

Table 32. (Con.)

MEAN DAILY TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 246615 POLEBRIDGE 1949-1978

	10-DAY AND MONTHLY PERIOD MEANS					10-DAY AND MONTHLY EXTREMES								
PRD. BEGINS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JAN 1	15.8	8.0	17.0	30.8 54	-2.1 74	41 53	30.3	7.3	32.0	-22 50	-2.1	10.3	-1.0	JAN 1
JAN 11	17.5	11.0	22.0	33.6 53	-6.2 50	40 61	30.6	7.9	32.0	-23 54	0.5	15.1	0.0	JAN 11
JAN 21	17.0	11.1	20.0	33.5 53	-5.3 57	41 60	31.8	6.2	34.0	-25 57	-0.8	14.6	0.0	JAN 21
FEB 1	22.2	7.6	23.0	32.9 61	1.1 75	47 63	34.6	5.5	35.0	-19 50	6.6	12.0	5.0	FEB 1
FEB 11	25.2	5.8	26.0	33.1 71	12.1 56	43 58	34.7	3.6	34.0	-19 56	11.9	11.1	14.0	FEB 11
FEB 21	25.1	7.7	27.0	34.9 58	0.0 62	41 57	34.1	5.7	35.0	-10 57	14.3	11.0	15.0	FEB 21
MAR 1	24.0	5.0	24.0	33.1 77	5.4 51	43 72	35.8	4.8	37.0	-13 60	9.7	10.1	11.0	MAR 1
MAR 11	30.5	4.9	30.0	40.5 72	19.1 65	47 72	37.9	3.5	37.0	-7 56	16.2	10.0	16.0	MAR 11
MAR 21	32.6	6.1	34.0	42.0 78	17.0 65	47 78	40.7	3.0	41.0	-4 65	22.0	11.9	26.0	MAR 21
APR 1	36.9	4.0	37.0	43.2 60	23.1 75	55 77	43.3	4.0	43.0	11 75	29.3	6.5	30.0	APR 1
APR 11	38.6	3.5	38.0	45.6 62	32.3 53	55 63	45.5	3.9	45.0	12 51	31.0	5.3	31.0	APR 11
APR 21	40.5	3.7	39.5	46.8 52	31.6 54	55 70	47.9	4.6	48.5	20 51	32.6	4.7	33.0	APR 21
MAY 1	44.8	3.6	43.5	52.4 66	40.2 54	58 76	51.4	3.9	51.0	17 54	37.4	5.5	37.5	MAY 1
MAY 11	48.1	2.9	47.5	53.8 49	40.6 74	63 56	54.6	3.8	55.0	36 74	41.4	3.4	40.0	MAY 11
MAY 21	50.1	3.9	50.0	60.1 58	44.2 64	65 66	56.8	4.0	56.5	33 60	42.4	4.7	42.0	MAY 21
JUN 1	53.8	3.9	53.0	60.8 72	46.5 53	70 73	60.3	4.6	60.5	39 76	46.6	4.0	48.0	JUN 1
JUN 11	54.8	3.3	54.0	64.1 74	50.2 76	69 74	61.7	3.5	62.0	39 76	47.6	3.6	48.0	JUN 11
JUN 21	55.8	3.2	55.0	63.4 70	50.6 51	71 55	63.0	3.6	62.5	39 71	48.2	3.9	49.0	JUN 21
JUL 1	58.8	3.5	58.0	66.4 75	51.9 71	70 75	64.7	3.2	65.0	45 55	52.1	3.9	52.0	JUL 1
JUL 11	61.1	3.4	61.0	67.6 60	56.0 62	79 67	67.7	4.3	67.0	46 78	54.3	4.0	54.0	JUL 11
JUL 21	61.6	2.3	61.0	65.5 60	56.4 54	73 59	67.4	2.8	68.0	49 55	54.3	2.9	54.0	JUL 21
AUG 1	[illegible]	[illegible]	[illegible]	69.3 71	56.9 56	72 76	66.7	3.4	67.0	47 64	54.7	3.7	54.5	AUG 1
AUG 11	59.4	3.3	58.0	68.2 67	54.3 78	72 61	64.7	3.2	64.5	48 76	53.7	3.9	53.0	AUG 11
AUG 21	56.6	3.5	55.0	63.3 61	51.4 78	73 69	63.9	4.2	63.0	45 76	49.8	3.4	49.0	AUG 21
SEP 1	54.4	3.7	53.0	64.9 67	47.1 65	75 67	61.3	5.0	62.0	37 62	47.1	4.0	47.0	SEP 1
SEP 11	49.9	4.3	49.5	56.9 67	39.4 65	67 66	57.1	5.1	56.0	32 70	42.5	5.6	43.0	SEP 11
SEP 21	47.8	4.8	47.5	59.3 67	39.5 72	72 67	54.1	5.4	54.5	32 72	40.9	5.4	40.5	SEP 21
OCT 1	43.3	3.3	43.0	49.4 63	37.9 59	62 55	51.3	4.3	51.0	26 70	36.1	4.0	37.0	OCT 1
OCT 11	40.6	3.5	41.0	46.4 63	33.2 69	53 67	47.2	3.8	48.0	24 49	33.1	4.2	33.0	OCT 11
OCT 21	36.6	4.3	38.0	44.2 62	27.6 61	52 55	44.6	4.6	44.5	10 71	28.3	6.6	30.0	OCT 21
NOV 1	32.3	4.6	32.0	39.6 75	20.5 73	51 78	41.2	4.4	40.0	6 51	22.9	8.2	25.0	NOV 1
NOV 11	27.8	7.3	29.0	38.2 54	5.8 55	43 62	37.0	3.6	37.0	-18 59	16.4	11.4	19.0	NOV 11
NOV 21	25.7	5.0	26.0	35.6 49	14.4 52	45 49	36.3	4.7	36.0	-7 58	11.8	8.9	12.0	NOV 21
DEC 1	22.4	7.2	23.0	32.5 65	-4.2 72	43 65	34.9	4.4	34.5	-19 72	8.2	11.6	12.0	DEC 1
DEC 11	21.2	8.1	22.0	33.9 66	4.3 64	37 77	32.3	4.2	33.0	-23 64	7.7	12.8	7.0	DEC 11
DEC 21	20.1	8.2	21.0	33.3 50	-0.1 61	39 56	32.3	5.3	34.0	-25 68	4.8	11.6	6.5	DEC 21
MONTH														MONTH
JAN	16.8	7.1	17.0	30.3 53	1.0 50	41 60	36.3	3.1	36.0	-25 57	-9.0	10.7	-1.0	JAN
FEB	24.1	4.1	24.0	31.8 61	15.2 49	47 63	38.4	4.3	39.0	-19 56	1.7	16.6	1.0	FEB
MAR	28.5	3.7	28.0	35.2 72	21.1 55	47 78	41.7	2.5	41.0	-13 60	6.9	10.5	9.0	MAR
APR	35.7	2.6	35.5	43.3 69	31.6 75	55 78	49.5	3.8	49.0	11 75	26.8	6.3	28.0	APR
MAY	47.8	2.4	47.0	54.7 55	44.4 53	65 66	57.9	3.1	57.5	17 54	34.4	4.9	36.0	MAY
JUN	54.8	2.3	54.0	60.0 70	50.3 76	71 55	65.5	2.7	65.5	39 76	44.7	3.2	45.0	JUN
JUL	60.5	1.8	60.0	64.5 60	57.7 72	79 67	69.5	2.9	69.0	45 55	50.6	2.9	51.0	JUL
AUG	59.1	2.6	58.0	64.5 67	55.4 64	73 69	68.0	3.0	68.0	45 76	49.4	2.9	49.0	AUG
SEP	50.7	3.3	50.5	60.4 67	42.9 65	75 67	62.1	5.0	62.0	32 72	38.3	4.5	37.0	SEP
OCT	40.2	2.3	40.0	44.6 65	36.7 71	62 55	51.8	3.9	51.0	10 71	27.6	6.1	30.0	OCT
NOV	28.6	3.6	28.0	35.9 54	19.6 55	51 78	42.2	3.6	43.0	-19 59	4.4	10.1	10.0	NOV
DEC	21.2	4.6	21.5	28.4 62	11.2 51	43 65	36.7	2.9	37.0	-25 68	-2.8	11.3	-0.5	DEC

(con.)

Table 32. (Con.)

MEAN OAILY TEMPERATURE

MEAN, STANOARO OEVIATION, ANO EXTREME VALUES

STATION NUMBER 247978 SUMMIT

1949-1978

PRO. BEGINS	MEAN	STO. OEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STO. OEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STO. OEV.	MEOIAN LOW	PRO. BEGINS
	10-OAY ANO MONTHLY PERIOO MEANS					10-DAY ANO MONTHLY EXTREMES								
JAN 1	13.8	8.5	15.0	27.8 61	-5.4 73	40 54	27.6	6.4	25.0	-34 59	-6.4	14.7	-1.0	JAN 1
JAN 11	14.4	11.2	16.0	29.9 61	-8.9 50	41 61	26.4	8.9	29.0	-29 54	-5.4	15.1	-1.0	JAN 11
JAN 21	13.6	12.3	17.0	29.9 53	-12.6 69	43 68	29.0	10.0	31.0	-29 50	-6.1	16.0	-1.0	JAN 21
FEB 1	21.4	8.1	20.0	34.1 54	-4.8 75	47 62	32.7	6.4	33.0	-18 75	6.3	12.1	4.0	FEB 1
FEB 11	21.1	6.4	21.5	33.9 77	3.6 49	43 58	32.5	5.3	33.5	-23 56	3.6	13.1	5.0	FEB 11
FEB 21	21.4	10.2	23.0	35.8 68	-13.9 62	43 58	31.3	9.0	32.5	-24 62	8.7	14.1	9.5	FEB 21
MAR 1	19.8	7.9	20.0	36.3 68	-6.9 51	46 72	33.4	5.7	33.0	-29 60	1.4	13.8	1.5	MAR 1
MAR 11	23.9	6.8	24.0	40.1 72	8.5 67	46 60	35.2	6.0	36.0	-19 65	9.7	12.8	10.0	MAR 11
MAR 21	27.5	7.9	28.5	41.3 78	8.0 65	50 78	38.3	5.6	39.5	-16 65	13.8	13.3	18.0	MAR 21
APR 1	32.2	5.1	32.0	41.1 69	15.7 75	52 60	41.8	5.2	42.0	-10 54	19.9	9.4	20.0	APR 1
APR 11	33.3	5.1	32.5	44.0 62	20.8 53	53 62	42.1	4.9	42.0	5 51	22.9	7.9	24.0	APR 11
APR 21	34.9	5.5	34.5	45.6 77	23.4 54	53 68	43.7	5.4	44.0	6 51	24.7	7.2	26.0	APR 21
MAY 1	39.4	4.0	39.5	47.2 58	31.4 56	54 58	46.7	3.8	47.0	15 54	31.1	6.2	32.0	MAY 1
MAY 11	43.2	3.5	42.5	48.4 56	33.4 66	60 73	51.4	4.6	50.5	24 67	34.1	5.0	34.0	MAY 11
MAY 21	45.4	3.8	44.0	55.3 58	39.3 78	61 58	53.1	4.0	53.0	30 75	37.2	4.7	37.0	MAY 21
JUN 1	48.9	4.4	47.0	56.8 72	40.5 51	66 77	56.8	4.8	56.0	29 66	40.6	4.8	41.0	JUN 1
JUN 11	50.5	3.6	49.0	61.6 74	46.1 57	67 61	58.3	4.2	58.0	34 76	42.8	4.9	42.0	JUN 11
JUN 21	51.9	4.0	51.0	59.9 74	42.6 51	70 70	60.2	5.1	60.5	33 71	42.9	5.2	42.5	JUN 21
JUL 1	54.9	3.7	55.0	62.7 70	47.0 71	67 78	61.2	3.3	60.0	39 55	47.4	4.2	47.0	JUL 1
JUL 11	57.2	3.5	57.0	66.1 55	50.3 62	71 73	63.8	4.1	63.0	40 74	49.3	4.9	49.0	JUL 11
JUL 21	57.8	2.6	57.0	63.6 60	53.6 54	74 60	64.8	3.6	65.0	44 75	50.2	3.0	50.0	JUL 21
AUG 1	57.5	3.2	58.0	64.2 71	50.2 75	73 61	64.9	4.3	65.0	38 77	49.6	4.0	49.0	AUG 1
AUG 11	56.2	3.5	56.0	62.6 61	49.9 74	70 61	62.9	3.5	63.0	40 66	49.2	4.4	49.0	AUG 11
AUG 21	53.1	3.8	52.0	61.7 61	47.3 64	73 69	61.4	4.8	60.0	36 65	44.3	4.6	45.0	AUG 21
SEP 1	50.3	5.0	50.0	59.9 67	38.0 64	71 50	59.6	5.8	60.0	28 64	40.8	5.9	41.5	SEP 1
SEP 11	46.1	4.9	46.0	53.9 60	32.8 65	67 53	56.8	5.6	58.5	16 70	35.1	7.2	35.0	SEP 11
SEP 21	44.7	6.5	44.0	55.6 63	33.0 72	65 67	54.1	6.7	55.0	18 65	34.6	8.2	34.5	SEP 21
OCT 1	41.6	5.5	42.0	48.9 71	31.2 59	60 60	53.2	4.9	55.0	15 70	29.6	8.0	32.0	OCT 1
OCT 11	39.0	5.5	39.0	46.8 55	·25.8 69	62 61	48.0	6.4	47.0	14 49	28.5	6.0	30.0	OCT 11
OCT 21	34.8	5.5	34.0	44.7 65	24.6 61	55 66	45.1	4.9	46.0	6 71	22.9	8.3	24.0	OCT 21
NOV 1	30.4	7.0	30.0	40.8 49	4.6 73	54 75	41.1	5.5	41.0	-7 73	17.4	11.6	18.0	NOV 1
NOV 11	24.5	8.3	26.0	35.9 49	-2.2 55	45 76	35.7	5.7	36.0	-24 55	11.3	13.1	13.0	NOV 11
NOV 21	22.9	6.0	23.5	35.4 49	10.6 52	45 50	34.2	5.6	34.0	-11 70	7.9	10.7	8.5	NOV 21
DEC 1	20.5	7.8	21.0	32.6 65	-4.6 72	43 50	33.6	4.9	34.0	-32 56	4.1	14.5	10.0	DEC 1
OEC 11	18.9	9.4	20.5	32.1 76	-1.9 64	42 60	30.9	6.2	31.0	-30 64	4.8	14.4	8.0	DEC 11
DEC 21	18.8	8.8	20.5	30.9 50	-8.7 68	40 50	30.9	5.8	32.0	-38 68	3.9	14.1	8.0	OEC 21
MONTH														MONTH
JAN	13.9	7.6	14.0	26.3 58	-6.0 50	43 68	34.7	4.9	35.0	-34 59	-15.1	12.5	-1.0	JAN
FEB	21.3	4.9	21.5	29.8 77	12.5 49	47 62	36.7	4.3	37.0	-24 62	-3.6	11.5	-1.0	FEB
MAR	23.6	5.3	23.5	33.5 68	13.5 65	50 78	40.3	3.9	40.0	-29 60	-2.5	13.2	-1.0	MAR
APR	33.5	3.4	33.0	40.3 49	27.1 75	53 68	46.8	3.8	47.0	-10 54	16.4	8.7	17.5	APR
MAY	42.7	2.4	42.0	50.1 58	39.5 50	61 58	54.5	3.8	53.5	15 54	29.2	5.4	30.0	MAY
JUN	50.4	2.9	50.0	57.1 61	44.3 51	70 70	62.5	3.2	62.0	29 66	38.1	4.2	38.5	JUN
JUL	56.7	2.1	56.0	61.8 60	52.6 62	74 60	66.0	3.3	65.0	39 55	45.5	3.4	46.0	JUL
AUG	55.5	2.9	55.0	62.2 61	50.3 75	73 69	66.8	3.3	67.0	36 65	43.6	4.4	44.0	AUG
SEP	47.0	4.1	46.0	54.5 67	36.4 65	71 50	61.6	4.5	61.0	16 70	30.1	6.7	30.0	SEP
OCT	38.5	3.6	38.0	46.9 53	32.1 69	62 61	54.5	3.7	55.0	6 71	20.9	7.6	22.0	OCT
NOV	26.0	4.9	25.0	37.4 49	12.8 55	54 75	42.4	4.5	41.0	-24 55	3.4	11.9	3.0	NOV
DEC	19.4	5.1	20.0	26.7 57	10.2 68	43 50	36.0	4.3	36.0	-38 68	-8.5	14.1	-1.0	OEC

Table 33.--Afternoon dry bulb temperature (°F) and relative humidity (percent) statistics at fire-weather stations in or near Glacier National Park; at 1600 m.s.t., based on years 1951-70 except as noted. Also, 1300 m.s.t. data observed during 1974-83 (see discussion in text). Letter M following year of highest or lowest average denotes average computed with incomplete data; based on at least six daily values per 10-day period

DRY BULB TEMPERATURE — MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240210 POLEBRIDGE RS — 1951-1970

	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	19	74.0	6.5	74.0	86.2 68	61.5 55	93 68	86.2	4.8	88.0	44 55	59.9	7.6	59.0	JUL 1
JUL 11	20	79.1	5.8	77.5	90.0 60	70.5 68	98 60	88.8	4.5	88.5	58 70	67.4	8.1	66.0	JUL 11
JUL 21	20	80.4	4.8	81.0	87.9 60	72.0 70	96 59	89.3	4.0	90.0	54 54	65.6	8.8	62.0	JUL 21
AUG 1	19	78.4	5.7	80.0	87.9 61	67.0 62	99 61	88.4	6.0	89.0	54 69	63.6	7.1	62.0	AUG 1
AUG 11	20	78.5	7.4	79.0	93.7 67	61.6 68	98 67	87.6	5.7	89.5	52 68	65.8	10.6	63.5	AUG 11
AUG 21	20	72.1	7.8	71.5	86.1 70	60.9 51	99 69	86.3	7.2	86.5	48 51	57.6	7.4	55.5	AUG 21
SEP 1	18	70.3	8.3	71.0	84.5 67	55.0 64	97 67	82.9	7.8	84.0	40 62	54.2	8.5	54.0	SEP 1
SEP 11	13	66.1	7.5	63.0	76.4 56	54.5 70	91 58	80.5	7.4	84.0	39 70	49.8	8.1	47.0	SEP 11
SEP 21	7	61.5	8.5	59.0	77.8 67	51.6 59	86 67	75.3	7.3	75.0	40 68	47.4	6.2	46.0	SEP 21
MONTH															MONTH
JUL	20	77.9	3.3	77.0	86.8 60	72.8 63 M	98 60	91.4	3.6	91.5	44 55	57.2	5.9	57.0	JUL
AUG	20	76.2	5.4	74.5	86.8 67	68.5 64	99 69	91.8	4.0	91.5	48 51	54.8	4.7	54.5	AUG
SEP	12	66.8	7.1	68.0	79.3 67	57.1 70 M	97 67	84.7	6.8	84.0	39 70	46.3	5.8	45.0	SEP

RELATIVE HUMIDITY — MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240210 POLEBRIDGE RS — 1951-1970

	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	19	40.3	12.2	39.0	63.5 55	20.6 67	94 56	68.0	20.1	77.0	12 60	21.9	7.0	22.0	JUL 1
JUL 11	20	34.8	6.7	35.5	45.7 70	22.9 67	94 70	59.3	15.5	57.0	15 67	20.1	3.8	20.5	JUL 11
JUL 21	20	29.9	8.4	28.0	50.5 55	19.2 69	94 65	56.9	20.8	51.0	9 68	16.3	5.0	15.5	JUL 21
AUG 1	19	34.7	10.7	33.0	53.3 62	19.7 61	100 60	67.1	21.0	66.0	7 65	18.5	6.9	18.0	AUG 1
AUG 11	20	32.0	11.5	30.0	64.1 68	17.5 67	94 51	57.8	21.9	55.0	8 66	16.6	6.3	14.5	AUG 11
AUG 21	20	39.2	13.6	39.0	63.5 51	17.6 69	93 62	70.5	19.4	76.5	9 66	19.3	8.8	16.5	AUG 21
SEP 1	16	38.2	12.0	34.0	59.1 64	22.8 66	94 63	68.8	22.1	75.5	7 65	20.2	8.8	19.0	SEP 1
SEP 11	13	43.3	13.4	44.0	62.3 59	25.1 60	93 54	71.8	18.2	74.0	5 60	23.1	8.2	22.0	SEP 11
SEP 21	7	51.4	15.7	56.0	67.7 59	18.6 67	100 70	84.3	23.4	93.0	9 67	28.4	11.7	29.0	SEP 21
MONTH															MONTH
JUL	20	34.8	6.7	35.5	49.1 55	21.5 67	94 70	78.3	15.3	83.5	9 68	14.9	3.3	15.0	JUL
AUG	20	35.5	8.4	35.0	47.6 54	21.6 69	100 60	82.6	11.9	84.5	7 65	13.0	3.5	12.5	AUG
SEP	12	43.4	11.7	40.0	60.4 59	24.1 67	100 70	84.5	14.9	92.0	5 60	21.3	8.7	19.0	SEP

DRY BULB TEMPERATURE — MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240210 POLEBRIDGE RS — 1974-1983

	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUN 21	7	70.2	4.7	69.0	76.4 77	63.4 80	85 79	80.9	3.9	82.0	47 76	60.3	7.7	61.0	JUN 21
JUL 1	9	70.2	6.5	68.0	85.8 75	64.1 82	92 75	80.9	5.5	80.0	46 81	57.0	9.0	53.0	JUL 1
JUL 11	10	71.4	4.9	70.5	78.6 74	64.1 80 M	92 79	84.8	5.1	85.0	50 82	56.9	4.6	56.5	JUL 11
JUL 21	10	75.3	4.8	75.0	83.1 74	67.2 81	94 75	85.0	5.8	84.5	52 77	61.7	6.8	62.5	JUL 21
AUG 1	9	74.2	4.6	74.0	80.8 79	67.3 80	90 74	83.0	4.6	84.0	53 76	62.6	6.7	61.0	AUG 1
AUG 11	10	70.3	5.9	69.5	81.5 81	61.6 78	90 81	80.2	5.6	79.0	50 78	57.9	7.1	57.0	AUG 11
AUG 21	10	67.7	6.0	68.5	77.6 81	59.3 75	93 81	77.8	6.5	76.5	51 75	55.2	3.8	55.0	AUG 21
MONTH															MONTH
JUL	10	72.6	4.9	71.0	81.0 74 M	66.1 83 M	94 75	87.0	5.1	88.0	46 81	53.0	3.4	53.5	JUL
AUG	9	70.3	4.3	69.0	78.9 81	64.7 80 M	93 81	85.1	4.9	85.0	50 78	52.9	3.0	52.0	AUG

RELATIVE HUMIDITY — MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240210 POLEBRIDGE RS — 1974-1983

	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUN 21	7	46.9	9.8	52.0	56.5 83	32.1 79	90 83	76.6	15.4	82.0	7 79	26.7	10.4	26.0	JUN 21
JUL 1	9	52.9	12.2	48.0	72.9 78	30.7 80	100 82	80.4	16.7	87.0	16 79	31.9	11.1	29.0	JUL 1
JUL 11	10	50.4	8.3	48.0	65.3 80 M	37.5 74	100 80	83.2	14.2	87.5	23 74	30.0	5.8	29.0	JUL 11
JUL 21	10	46.8	10.7	46.5	60.7 83 M	31.6 74	95 76	76.4	16.5	80.5	8 78	26.6	10.4	25.5	JUL 21
AUG 1	9	46.3	11.0	43.0	63.9 82 M	33.2 79	95 82	72.7	17.0	71.0	17 75	25.4	6.1	25.0	AUG 1
AUG 11	10	52.8	9.7	52.5	65.5 76	36.3 81	100 80	83.2	14.5	85.0	20 81	32.7	10.2	35.0	AUG 11
AUG 21	10	54.8	11.8	54.0	72.0 77	35.1 81	100 77	84.8	9.8	88.0	17 81	36.8	10.5	39.5	AUG 21
MONTH															MONTH
JUL	10	49.5	7.5	51.0	60.6 83 M	34.4 74 M	100 82	90.3	11.3	92.0	8 78	23.5	8.6	24.0	JUL
AUG	9	51.8	8.6	54.0	62.5 76	36.4 81	100 80	93.2	4.7	94.0	17 81	22.8	5.5	22.0	AUG

(con.)

Table 33. (Con.)

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240217 HUNGRY HORSE RS (INCLUDES CORAM RS, 1951-1957) 1951-1970

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	I	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS						I	10-DAY AND MONTHLY EXTREME DAILY VALUES								
MAY 1	9	59.4	8.3	56.0	72.2 66 M	50.6 64	I	85 66	70.3	9.0	69.0	36 67	48.4	8.5	46.0	MAY 1
MAY 11	11	61.7	5.4	62.0	71.4 58	52.7 66	I	83 58	75.4	4.1	75.0	38 67	44.4	7.2	42.0	MAY 11
MAY 21	14	62.7	8.1	62.0	79.8 58	51.9 59 M	I	86 66	74.8	8.3	76.0	38 64	49.5	7.4	50.0	MAY 21
JUN 1	19	66.7	5.7	67.0	76.1 70	58.0 54 M	I	87 70	77.6	6.9	79.0	44 62	53.8	6.8	53.0	JUN 1
JUN 11	20	67.7	6.0	66.5	81.3 61	55.8 54 M	I	93 61	80.1	6.4	80.5	43 65	53.3	6.5	51.5	JUN 11
JUN 21	19	69.0	6.1	68.0	80.8 61	56.5 69	I	89 70	80.3	6.3	81.0	45 66	54.4	6.3	54.0	JUN 21
JUL 1	20	74.7	7.0	75.0	84.6 68	58.0 55	I	92 68	86.3	5.0	86.5	42 55	60.8	9.2	60.0	JUL 1
JUL 11	20	80.1	5.7	79.0	94.1 60	71.3 52	I	101 60	89.6	4.3	89.0	55 70	67.8	9.3	64.5	JUL 11
JUL 21	20	80.9	4.7	81.5	88.5 60	71.0 70	I	96 60	89.8	3.5	90.5	51 54	67.1	8.4	65.0	JUL 21
AUG 1	20	79.2	5.1	80.0	88.3 61	70.0 62	I	103 61	89.2	4.8	90.0	51 56	63.9	7.2	64.0	AUG 1
AUG 11	20	79.0	6.9	79.0	94.5 67	63.9 68	I	97 67	88.3	4.8	87.5	50 66	65.9	11.2	65.0	AUG 11
AUG 21	20	72.1	7.7	71.0	83.8 67	59.9 60	I	100 69	86.1	6.4	85.5	47 51	58.8	8.7	57.5	AUG 21
SEP 1	20	69.8	7.1	69.0	82.7 67	58.4 64	I	97 67	81.7	7.5	82.0	43 62	55.0	7.6	54.5	SEP 1
SEP 11	20	64.8	7.4	64.0	75.0 56	45.0 65	I	92 58	77.8	8.8	80.0	36 65	49.0	7.2	50.0	SEP 11
SEP 21	19	61.9	9.7	60.0	77.3 57	47.5 51 M	I	87 67	72.1	9.3	72.0	39 65	50.1	9.3	49.0	SEP 21
OCT 1	13	58.4	6.4	58.0	68.0 52	47.7 69	I	77 70	70.4	6.4	72.0	32 70	48.1	8.2	50.0	OCT 1
OCT 11	11	52.2	5.9	52.0	62.1 53 M	44.6 66	I	70 53	60.6	5.2	60.0	35 66	44.3	5.7	45.0	OCT 11
OCT 21	11	45.1	6.1	45.0	54.4 53 M	36.9 57 M	I	63 69	54.6	6.8	57.0	21 57	36.1	6.9	36.0	OCT 21
MONTH							I									MONTH
MAY	9	62.5	5.2	62.0	74.0 58	57.1 64	I	86 66	80.0	4.8	80.0	36 67	40.7	3.3	39.0	MAY
JUN	18	68.0	3.7	67.0	78.7 61	62.5 54 M	I	93 61	85.2	3.4	85.0	43 65	49.2	4.9	48.0	JUN
JUL	20	78.7	3.5	78.0	88.7 60	71.9 55	I	101 60	92.0	2.9	91.5	42 55	57.9	7.4	58.5	JUL
AUG	20	76.6	5.0	75.0	87.0 67	68.9 64	I	103 61	91.8	4.4	91.0	47 51	55.1	6.1	53.5	AUG
SEP	20	65.8	6.1	65.5	77.4 67	52.9 65	I	97 67	83.4	6.6	84.0	36 65	45.9	6.3	43.0	SEP
OCT	10	52.2	5.1	50.5	60.1 53 M	45.7 69 M	I	77 70	70.5	5.4	71.5	21 57	36.9	4.8	35.5	OCT

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240217 HUNGRY HORSE RS (INCLUDES CORAM RS, 1951-1957) 1951-1970

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	I	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS						I	10-DAY AND MONTHLY EXTREME DAILY VALUES								
MAY 1	9	40.9	12.7	38.0	67.2 64	26.9 66 M	I	91 67	69.3	17.7	70.0	11 66	22.2	10.4	21.0	MAY 1
MAY 11	11	40.5	7.2	41.0	53.1 57 M	27.5 63	I	92 65	77.5	14.3	84.0	15 70	19.7	5.4	19.0	MAY 11
MAY 21	14	44.2	10.6	41.5	63.1 64	26.9 58	I	93 68	75.9	13.3	77.5	10 66	22.4	8.0	26.0	MAY 21
JUN 1	19	45.6	12.1	43.0	66.0 66	25.2 65	I	99 69	73.1	20.9	80.0	9 65	27.0	7.5	26.0	JUN 1
JUN 11	20	44.5	10.7	42.5	64.1 64	30.5 61	I	93 65	70.4	19.8	78.0	13 61	25.6	6.6	25.5	JUN 11
JUN 21	19	43.1	12.1	41.0	66.7 69	20.1 61	I	100 63	78.1	21.6	86.0	10 56	24.2	7.1	23.0	JUN 21
JUL 1	20	38.4	12.3	36.0	69.4 55	21.5 68	I	95 58	65.8	23.8	69.0	11 61	22.4	7.3	21.5	JUL 1
JUL 11	20	31.8	7.7	31.0	47.1 52	16.7 60	I	94 70	54.8	19.7	53.0	10 60	18.9	4.3	20.0	JUL 11
JUL 21	20	28.0	9.4	26.5	50.6 70	17.5 60	I	94 70	54.0	22.5	45.0	6 67	15.5	5.6	15.0	JUL 21
AUG 1	20	31.7	10.6	27.5	48.1 62	17.9 59	I	94 70	64.9	22.3	67.5	7 61	16.2	5.6	16.0	AUG 1
AUG 11	20	28.7	10.4	26.0	55.7 68	10.4 67	I	94 68	54.4	24.5	46.0	6 67	15.7	5.7	15.5	AUG 11
AUG 21	20	39.0	14.5	34.5	63.9 65	16.0 67	I	100 54	70.4	23.0	77.0	8 69	20.1	8.1	19.0	AUG 21
SEP 1	20	39.0	10.5	38.5	58.0 70	21.7 67	I	100 70	72.9	20.8	77.0	10 67	20.1	6.6	19.5	SEP 1
SEP 11	20	42.9	12.3	39.0	72.0 65	25.2 53	I	93 65	75.2	16.3	79.0	9 58	24.7	9.3	24.0	SEP 11
SEP 21	19	45.9	12.8	50.0	64.3 61 M	19.9 67	I	100 56	72.6	20.5	85.0	10 67	28.8	9.8	26.0	SEP 21
OCT 1	13	49.0	13.8	46.0	66.2 69	27.6 52	I	100 70	77.2	21.3	87.0	12 70	26.7	7.8	26.0	OCT 1
OCT 11	11	52.6	12.8	55.0	75.7 64	34.4 52	I	93 66	74.7	17.6	79.0	17 69	30.9	9.4	30.0	OCT 11
OCT 21	11	65.1	12.6	71.0	78.2 70	40.7 52	I	100 56	87.5	10.0	92.0	24 53	43.0	9.8	45.0	OCT 21
MONTH							I									MONTH
MAY	9	40.8	7.6	40.0	57.4 64	29.4 58	I	93 68	88.0	5.0	89.0	10 66	15.8	6.8	15.0	MAY
JUN	18	44.5	6.0	46.0	51.8 57 M	27.8 61	I	100 63	89.9	11.0	93.0	9 65	19.3	5.1	21.0	JUN
JUL	20	32.5	7.5	32.0	51.6 55	18.9 60	I	95 58	75.8	17.6	81.5	6 67	14.4	4.9	13.0	JUL
AUG	20	33.3	8.7	33.5	44.7 65	15.7 67	I	100 54	78.9	18.4	82.5	6 67	12.8	4.3	12.0	AUG
SEP	20	42.4	9.0	42.5	55.7 65	24.7 67	I	100 70	84.9	14.6	90.0	9 58	18.5	5.9	18.0	SEP
OCT	10	55.3	11.4	57.0	71.0 64 M	34.5 52	I	100 70	90.1	11.1	92.0	12 70	24.5	8.0	23.5	OCT

(con.)

Table 33. (Con.)

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240217 HUNGRY HORSE RS

1974-1983

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
MAY 1	8	56.2	4.7	54.5	64.3 76	51.5 81 M	81 80	67.1	8.4	66.0	36 78	45.0	4.6	45.5	MAY 1
MAY 11	9	59.1	4.5	58.0	66.8 80	53.5 78	76 76	70.8	3.9	72.0	44 83	48.8	5.7	46.0	MAY 11
MAY 21	9	60.5	7.2	57.0	75.3 83	51.0 78	84 83	75.0	4.2	73.0	31 78	46.9	10.2	46.0	MAY 21
JUN 1	10	63.2	4.9	62.0	70.1 78	57.6 80	81 77	74.3	5.3	75.0	40 80	49.9	7.4	48.0	JUN 1
JUN 11	10	66.7	7.9	63.5	81.2 74	57.1 81	88 74	77.4	7.8	77.5	46 76	55.4	7.4	53.0	JUN 11
JUN 21	10	66.6	5.3	68.0	75.3 77	61.2 76	86 76	79.5	4.8	80.5	44 76	56.6	8.7	56.0	JUN 21
JUL 1	10	70.0	3.9	69.0	79.3 75	66.2 82	85 75	79.6	3.1	79.0	51 81	57.2	4.3	56.5	JUL 1
JUL 11	10	70.6	4.5	70.5	77.2 79	63.4 83	90 79	81.9	5.1	83.0	50 82	55.1	3.5	55.5	JUL 11
JUL 21	10	76.8	4.7	78.0	82.5 74	69.3 83 M	90 75	84.4	4.6	85.0	58 81	66.8	7.5	66.0	JUL 21
AUG 1	9	74.9	4.9	72.0	82.1 79	69.5 80	88 78	83.4	3.9	85.0	55 74	64.0	8.2	59.0	AUG 1
AUG 11	10	71.2	5.9	70.5	82.0 81	62.5 78	87 81	80.8	3.3	79.5	51 80	60.3	8.0	57.5	AUG 11
AUG 21	10	68.7	6.6	70.5	78.5 81	58.7 75	92 81	78.9	6.5	79.5	47 77	55.9	5.1	56.0	AUG 21
SEP 1	10	66.1	2.8	66.0	70.7 82	60.8 83	82 78	76.9	3.8	78.5	47 82	52.2	4.1	51.5	SEP 1
SEP 11	10	63.0	5.8	61.5	73.1 81	53.0 78	82 79	71.5	6.6	70.5	44 78	52.3	5.9	51.5	SEP 11
SEP 21	10	60.1	6.3	62.0	68.7 79	48.4 77	78 79	68.2	7.3	70.5	43 82	50.3	6.9	48.5	SEP 21
MONTH															MONTH
MAY	8	58.3	3.0	58.5	61.0 81 M	52.4 78	84 83	75.4	3.2	75.0	31 78	42.0	4.9	44.0	MAY
JUN	10	66.2	4.1	65.5	71.8 77	60.7 81	88 74	81.6	4.2	81.0	40 80	48.0	5.6	46.5	JUN
JUL	10	72.6	3.3	72.0	77.3 75	66.0 83 M	90 79	85.3	3.7	85.0	50 82	53.8	2.8	54.0	JUL
AUG	9	71.3	4.8	68.0	80.1 81	66.1 75	92 81	84.7	4.3	85.0	47 77	53.4	3.6	54.0	AUG
SEP	10	63.0	3.1	62.5	69.1 79	58.4 77	82 79	77.2	4.0	78.5	43 82	46.9	4.0	46.0	SEP

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240217 HUNGRY HORSE RS

1974-1983

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
MAY 1	8	55.3	6.9	54.0	66.2 79	44.0 76	93 78	84.6	5.8	86.0	15 80	27.8	10.2	28.0	MAY 1
MAY 11	9	46.4	6.9	43.0	59.8 78	40.2 83	94 78	81.3	12.8	82.0	13 79	21.2	8.7	17.0	MAY 11
MAY 21	9	50.9	12.2	53.0	65.1 80	28.9 83	100 82	78.7	19.9	84.0	15 83	28.3	8.9	34.0	MAY 21
JUN 1	10	48.6	10.4	47.0	70.7 81	32.8 78	94 76	78.8	12.7	83.5	17 76	25.3	10.0	22.0	JUN 1
JUN 11	10	49.2	10.3	48.0	63.1 81	31.4 77	94 83	79.8	16.1	84.0	13 77	27.3	9.3	25.5	JUN 11
JUN 21	10	45.8	12.3	47.5	60.4 80	24.6 77	95 83	72.9	19.3	71.0	11 77	26.8	9.9	26.5	JUN 21
JUL 1	10	46.9	9.1	42.5	64.6 78	36.4 77	89 78	74.7	8.9	74.5	11 76	26.2	11.7	26.5	JUL 1
JUL 11	10	49.4	10.9	49.5	67.7 83	31.0 79	95 83	82.5	11.8	88.0	20 79	30.3	7.9	30.0	JUL 11
JUL 21	10	39.2	10.6	39.0	57.7 83 M	22.0 74	89 83	64.2	22.1	63.5	9 80	23.1	10.7	19.5	JUL 21
AUG 1	9	39.2	11.7	41.0	56.3 76	21.9 79	89 77	61.8	23.0	64.0	14 79	24.6	7.8	24.0	AUG 1
AUG 11	10	47.0	9.6	47.0	60.4 78	33.4 81	94 78	74.2	19.2	82.5	19 79	27.0	5.0	26.0	AUG 11
AUG 21	10	48.7	10.9	47.5	66.8 75	31.6 81	94 78	78.2	15.5	82.0	16 81	29.3	6.7	29.0	AUG 21
SEP 1	10	48.6	7.4	47.0	61.5 83	37.4 74	88 83	80.7	5.0	81.5	13 74	27.3	7.7	26.5	SEP 1
SEP 11	10	48.1	10.0	47.5	63.8 80	34.1 79	94 77	69.1	17.4	73.5	19 77	32.4	9.4	30.0	SEP 11
SEP 21	10	51.4	12.3	48.5	70.0 77	31.3 79	100 77	74.1	18.1	77.0	16 78	31.2	12.1	28.5	SEP 21
MONTH															MONTH
MAY	8	52.0	5.3	52.0	58.5 78	43.1 76	100 82	90.4	8.4	91.0	13 79	19.1	6.8	16.5	MAY
JUN	10	47.9	8.7	50.0	60.5 81	32.6 77	95 83	87.1	8.2	87.0	11 77	20.6	5.1	21.5	JUN
JUL	10	45.0	8.3	44.0	60.8 83 M	33.4 79	95 83	86.0	8.3	88.0	9 80	21.1	10.4	17.5	JUL
AUG	9	45.1	7.8	48.0	52.4 76	31.7 81	94 78	85.1	9.3	88.0	14 79	21.7	5.9	24.0	AUG
SEP	10	49.5	7.4	49.0	58.1 77	37.6 79	100 77	86.6	6.6	86.5	13 74	21.5	5.2	21.0	SEP

(con.)

Table 33. (Con.)

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240301 BELLY RIVER RS

1951-1970

10-DAY AND MONTHLY PERIOD MEANS / 10-DAY AND MONTHLY EXTREME DAILY VALUES

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUN 21	13	60.2	5.1	60.0	72.2 61	52.3 69	80 61	71.8	5.2	73.0	39 63	47.0	5.9	46.0	JUN 21
JUL 1	17	67.2	5.8	67.0	75.3 68	54.0 55	84 70	78.1	4.6	78.0	41 55	54.2	7.0	51.0	JUL 1
JUL 11	20	71.4	5.4	70.5	83.3 60	62.7 52	92 60	80.9	4.8	80.0	47 58	59.4	7.4	58.0	JUL 11
JUL 21	20	71.5	4.5	71.0	81.2 60	63.0 70	92 60	81.3	4.9	81.0	47 54	56.7	5.6	56.5	JUL 21
AUG 1	19	70.8	4.5	71.0	78.7 61	62.0 56	95 61	81.8	4.7	81.0	48 69	56.2	6.3	54.0	AUG 1
AUG 11	20	70.3	6.8	71.0	85.5 67	54.5 68	90 67	79.8	6.1	80.0	42 66	56.9	8.6	57.0	AUG 11
AUG 21	20	64.9	7.1	63.5	76.1 67	52.5 51	93 69	79.0	6.4	78.0	36 52	50.5	8.2	50.0	AUG 21
SEP 1	17	62.2	8.8	64.0	76.6 67	44.6 64	90 67	76.4	7.1	77.0	32 64	46.0	10.1	47.0	SEP 1
SEP 11	10	59.7	5.6	59.5	66.7 67	51.0 57	85 58	75.7	4.9	75.0	29 68	41.7	7.4	43.0	SEP 11
MONTH															MONTH
JUL	20	70.3	3.3	69.0	79.4 60	66.0 55	92 60	83.5	3.9	83.5	41 55	51.6	5.6	50.5	JUL
AUG	20	68.6	4.7	66.0	78.2 67	62.5 51	95 61	84.6	4.4	83.5	36 52	47.5	6.3	47.5	AUG

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240301 BELLY RIVER RS

1951-1970

10-DAY AND MONTHLY PERIOD MEANS / 10-DAY AND MONTHLY EXTREME DAILY VALUES

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUN 21	13	53.7	12.4	53.0	77.0 69	29.3 61	100 68	86.2	15.3	93.0	11 61	29.8	12.3	27.0	JUN 21
JUL 1	17	48.0	10.8	46.0	68.6 55	33.5 67	93 56	75.2	12.8	81.0	21 60	29.8	7.2	29.0	JUL 1
JUL 11	20	42.5	8.3	41.5	55.8 58	28.8 60	94 66	67.1	18.0	64.5	15 60	26.5	6.1	26.0	JUL 11
JUL 21	20	41.1	10.2	39.5	61.4 61	25.6 60	94 55	72.1	14.0	74.0	10 60	24.1	8.0	22.0	JUL 21
AUG 1	19	42.6	11.0	41.0	63.4 56	23.8 59	94 65	75.2	19.2	82.0	8 61	22.7	8.0	22.0	AUG 1
AUG 11	20	40.6	11.6	42.5	69.3 68	19.0 67	93 68	69.2	19.7	73.0	11 67	22.8	9.0	22.0	AUG 11
AUG 21	20	46.0	12.9	47.0	73.5 51	24.6 69	100 51	74.4	17.8	80.0	13 69	23.7	6.4	23.5	AUG 21
SEP 1	17	49.3	13.9	47.0	76.1 64	26.5 67	100 65	82.6	18.5	92.0	14 67	24.8	7.2	23.0	SEP 1
SEP 11	10	49.7	9.0	47.5	63.4 68	36.1 67	100 69	88.3	9.0	89.5	17 69	26.2	6.3	27.5	SEP 11
MONTH															MONTH
JUL	20	43.4	7.4	43.5	57.7 55	29.3 60	94 66	83.5	8.8	85.0	10 60	21.0	4.6	22.0	JUL
AUG	20	43.0	9.0	43.0	55.5 51	25.5 67	100 51	84.5	14.9	92.5	8 61	18.4	5.1	19.0	AUG

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240301 BELLY RIVER RS

1974-1983

10-DAY AND MONTHLY PERIOD MEANS / 10-DAY AND MONTHLY EXTREME DAILY VALUES

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	7	65.5	5.6	63.0	76.3 75	60.2 82	86 75	76.0	6.5	76.0	48 82	53.3	3.5	54.0	JUL 1
JUL 11	9	65.6	4.1	63.0	70.5 75	60.6 80	84 75	77.0	4.5	76.0	46 80	50.6	2.8	51.0	JUL 11
JUL 21	9	70.8	4.1	71.0	76.7 80	63.7 81	85 75	79.4	3.5	80.0	50 75	58.7	6.2	60.0	JUL 21
AUG 1	9	69.1	4.2	67.0	74.8 79	63.5 77	83 78	78.8	4.0	80.0	46 78	54.7	8.2	52.0	AUG 1
AUG 11	10	66.4	6.4	65.0	80.2 81	57.7 78	85 81	76.4	5.0	75.0	44 78	53.3	7.9	52.5	AUG 11
AUG 21	10	64.2	7.5	64.0	79.0 81 M	54.9 80	88 81	75.9	6.5	76.0	47 80	52.6	7.5	49.5	AUG 21
MONTH															MONTH
JUL	9	67.4	2.9	67.0	72.8 75	63.7 83 M	86 75	80.7	2.9	80.0	46 80	49.7	2.1	50.0	JUL
AUG	9	66.1	5.2	64.0	77.4 81 M	61.5 75	88 81	81.1	4.2	81.0	44 78	49.6	7.1	47.0	AUG

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240301 BELLY RIVER RS

1974-1983

10-DAY AND MONTHLY PERIOD MEANS / 10-DAY AND MONTHLY EXTREME DAILY VALUES

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	7	50.4	10.6	50.0	69.3 74	38.0 76	100 75	79.9	14.4	75.0	13 76	30.1	11.2	27.0	JUL 1
JUL 11	9	53.5	6.6	49.0	63.6 83	46.9 76	100 83	88.4	11.2	89.0	20 74	31.4	8.2	33.0	JUL 11
JUL 21	9	46.9	7.5	49.0	58.0 81	35.2 80	95 78	77.9	20.7	94.0	25 80	29.7	5.2	28.0	JUL 21
AUG 1	9	48.1	12.0	46.0	70.5 76	33.7 79	100 77	77.2	20.6	82.0	20 79	31.6	9.4	31.0	AUG 1
AUG 11	10	51.6	11.2	52.5	65.0 75	33.3 81	100 74	78.7	16.1	78.0	19 79	30.8	7.9	34.0	AUG 11
AUG 21	10	53.6	12.3	55.0	67.6 75	27.8 81 M	100 78	79.9	19.0	84.5	18 81	30.5	7.5	29.5	AUG 21
MONTH															MONTH
JUL	9	50.6	3.2	50.0	56.2 83 M	46.2 76	100 83	95.7	4.6	95.0	13 76	24.1	4.8	26.0	JUL
AUG	9	51.9	9.1	55.0	60.0 75	33.2 81 M	100 78	89.9	16.5	94.0	18 81	26.4	6.6	26.0	AUG

(con.)

Table 33. (Con.)

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240303 SAINT MARY RS

1951-1970

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
JUN 11	8	63.8	7.1	60.0	76.0 61	56.1 57	85 61	75.6	7.3	74.5	43 56	51.5	7.1	48.5	JUN 11
JUN 21	13	65.0	5.8	64.0	76.3 61	56.2 52	85 62	75.4	6.1	75.0	42 63	51.8	6.2	51.0	JUN 21
JUL 1	15	68.2	5.7	70.0	76.6 61	55.4 55	90 54	81.5	5.7	83.0	41 55	55.1	6.5	55.0	JUL 1
JUL 11	19	74.7	5.6	74.0	85.6 60	62.9 52	96 60	84.3	5.9	84.0	48 58	62.2	8.1	62.0	JUL 11
JUL 21	18	75.4	4.7	74.0	83.6 60	68.8 55	94 59	85.2	4.6	85.0	50 54	60.6	8.0	60.5	JUL 21
AUG 1	19	73.4	4.9	73.0	81.1 61	62.8 56 M	97 61	85.0	5.5	85.0	47 56	56.8	6.4	56.0	AUG 1
AUG 11	19	73.8	5.7	74.0	87.1 67	65.1 66	93 67	83.7	4.6	84.0	44 66	59.1	8.5	60.0	AUG 11
AUG 21	19	67.2	7.5	66.0	79.7 70	55.0 51	99 69	81.7	7.2	82.0	38 52	52.7	8.9	53.0	AUG 21
SEP 1	16	61.3	6.8	62.0	70.4 55	47.0 64	86 69	76.0	5.9	75.0	31 62	44.3	8.5	44.0	SEP 1
SEP 11	8	58.7	5.0	57.0	67.7 56	53.4 57	84 59	75.6	5.1	73.5	32 57	42.5	6.9	41.5	SEP 11
MONTH															MONTH
JUL	19	73.3	4.4	72.0	81.5 60	67.0 69 M	96 60	87.5	4.5	88.0	41 55	54.9	6.9	55.0	JUL
AUG	19	71.4	4.7	69.0	80.3 67	64.9 51	99 69	88.1	4.8	88.0	38 52	49.0	6.4	48.0	AUG

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240303 SAINT MARY RS

1951-1970

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
JUN 11	8	48.3	10.2	48.5	60.6 57	32.4 61	100 64	79.5	12.6	79.0	16 60	27.4	8.7	25.0	JUN 11
JUN 21	13	44.3	12.0	45.0	68.4 52	24.4 61	94 55	72.4	22.9	86.0	11 58	26.1	11.9	23.0	JUN 21
JUL 1	15	43.1	12.2	42.0	68.4 55	24.7 60	94 64	73.5	16.9	68.0	13 60	24.6	8.9	23.0	JUL 1
JUL 11	19	37.0	8.9	37.0	58.3 52	22.8 60	100 52	63.6	18.3	66.0	8 70	21.3	7.6	22.0	JUL 11
JUL 21	18	33.7	10.3	31.0	53.5 55	19.2 60	90 62	61.2	19.8	61.5	6 54	18.3	7.4	18.0	JUL 21
AUG 1	19	38.3	10.0	39.0	61.0 56 M	21.0 59	94 52	72.6	17.7	80.0	6 61	19.7	5.9	20.0	AUG 1
AUG 11	19	34.0	8.7	32.0	46.9 51	17.3 67	89 57	61.9	20.1	58.0	7 69	17.9	5.5	17.0	AUG 11
AUG 21	19	41.7	12.5	41.0	70.8 51	22.5 67	100 54	69.4	17.5	68.0	11 67	20.7	6.5	22.0	AUG 21
SEP 1	16	47.3	12.1	45.5	73.7 64	31.5 58	100 64	81.3	15.6	85.5	8 69	25.2	8.0	26.5	SEP 1
SEP 11	8	52.3	10.1	53.0	66.3 54	38.7 56	100 64	86.8	9.7	89.5	16 59	23.5	7.0	22.0	SEP 11
MONTH															MONTH
JUL	19	37.1	9.0	37.0	56.1 55	22.1 60	100 52	77.3	16.9	82.0	6 54	16.6	6.5	18.0	JUL
AUG	19	38.1	8.1	38.0	53.1 51	23.4 67	100 54	80.8	12.6	83.0	6 61	15.3	5.3	15.0	AUG

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240303 SAINT MARY RS

1974-1983

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
JUL 1	6	66.3	6.3	64.5	76.5 75	59.9 82 M	89 75	77.8	7.6	76.5	43 81	52.0	6.9	53.0	JUL 1
JUL 11	9	68.3	4.7	67.0	73.5 74	61.0 80	92 79	80.8	7.1	85.0	50 82	53.8	4.0	52.0	JUL 11
JUL 21	9	71.6	4.8	73.0	77.2 74	61.0 81 M	87 79	82.7	4.8	83.0	48 79	57.8	8.1	58.0	JUL 21
AUG 1	9	70.0	3.7	70.0	74.6 79	65.0 77	89 74	80.8	4.7	80.0	47 74	57.0	7.5	56.0	AUG 1
AUG 11	10	66.6	6.5	65.0	80.5 81	59.2 78	88 81	77.4	5.6	76.0	45 78	53.3	9.1	51.0	AUG 11
AUG 21	10	63.6	5.8	63.0	73.7 81 M	56.4 77	85 81	74.6	7.4	74.5	45 81	50.5	4.9	49.0	AUG 21
MONTH															MONTH
JUL	5	69.6	4.5	71.0	73.9 75	62.6 81 M	92 79	84.6	4.6	85.0	43 81	49.0	4.6	50.0	JUL
AUG	9	66.3	4.5	66.0	76.1 81 M	61.0 80 M	89 74	82.7	4.6	84.0	45 81	47.1	2.0	47.0	AUG

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240303 SAINT MARY RS

1974-1983

PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS						10-DAY AND MONTHLY EXTREME DAILY VALUES								
JUL 1	6	45.7	9.4	45.0	57.3 82 M	33.0 76	95 75	76.2	17.3	78.5	15 74	24.8	8.9	24.0	JUL 1
JUL 11	9	46.3	8.7	45.0	56.8 83 M	31.0 74	94 76	73.3	12.9	76.0	18 76	28.9	8.4	31.0	JUL 11
JUL 21	9	42.8	11.2	40.0	64.7 81 M	27.2 74	100 79	76.9	21.5	84.0	15 78	22.3	5.5	[illegible].0	JUL 21
AUG 1	9	43.1	6.6	40.0	55.0 76	36.3 79	87 74	73.9	11.9	78.0	17 74	24.8	5.3	24 0	AUG 1
AUG 11	10	49.8	9.3	49.0	64.4 80	37.8 83	100 78	81.8	14.5	85.5	15 82	26.9	7.4	25.0	AUG 11
AUG 21	10	51.1	6.9	51.0	59.7 79	41.9 83 M	100 81	81.0	14.1	81.0	24 74	31.3	6.4	29.5	AUG 21
MONTH															MONTH
JUL	5	42.9	9.7	40.0	58.5 81 M	33.2 74	100 79	86.6	15.0	94.0	15 78	19.4	4.7	19.0	JUL
AUG	9	46.8	4.5	49.0	55.7 80 M	41.7 81 M	100 81	92.1	8.1	89.0	15 82	22.6	5.9	23.0	AUG

(con.)

Table 33. (Con.)

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240206 DESERT MTN LO

1951-1970

10-DAY AND MONTHLY PERIOD MEANS							10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	17	60.7	6.9	61.0	72.5 68	45.5 55	81 70	73.0	4.6	73.0	30 55	46.3	8.0	45.0	JUL 1
JUL 11	20	66.7	5.8	66.0	78.8 60	57.7 52	88 53	77.3	4.7	77.0	42 63	53.9	9.4	53.5	JUL 11
JUL 21	20	67.8	4.8	68.0	74.2 56	56.9 70	85 59	77.6	3.8	78.0	38 54	52.5	9.4	52.0	JUL 21
AUG 1	20	65.5	5.2	67.0	73.7 61	55.2 62	86 61	76.8	4.5	77.5	38 56	49.1	6.9	48.5	AUG 1
AUG 11	20	66.1	6.7	66.0	81.8 67	54.7 68 M	85 67	75.7	5.3	76.0	37 66	53.0	10.6	51.5	AUG 11
AUG 21	18	59.0	8.7	57.5	73.0 70	45.0 60 M	91 69	74.2	8.1	73.0	36 60	45.3	8.7	41.0	AUG 21
MONTH															MONTH
JUL	19	65.5	3.2	65.0	73.5 60	60.2 55	88 53	79.8	3.4	80.0	30 55	43.7	6.6	42.0	JUL
AUG	18	63.7	5.3	61.5	73.8 67	54.5 64	91 69	80.3	4.7	81.0	36 60	41.6	5.8	40.0	AUG

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION. AND EXTREME VALUES

STATION NUMBER 240206 DESERT MTN LO

1951-1970

10-DAY AND MONTHLY PERIOD MEANS							10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	17	51.7	14.9	54.0	83.5 55	26.9 60	100 69	82.3	19.2	88.0	10 60	28.1	10.3	29.0	JUL 1
JUL 11	20	43.1	8.9	42.5	61.1 63	28.5 60	100 70	70.4	18.8	67.5	12 67	24.3	6.6	23.5	JUL 11
JUL 21	20	38.3	11.7	36.0	68.8 70	25.1 53	100 70	70.6	23.4	72.5	11 60	21.1	6.7	20.5	JUL 21
AUG 1	20	44.2	13.3	39.5	68.6 70	25.2 59	100 70	80.8	19.2	84.0	11 61	23.9	8.2	23.0	AUG 1
AUG 11	20	39.5	12.6	38.0	68.5 68 M	17.6 67	100 68	69.3	23.4	68.0	9 69	21.6	8.5	22.0	AUG 11
AUG 21	18	50.6	17.4	47.5	87.3 54 M	23.8 69	100 66	82.3	22.3	93.0	13 57	24.3	11.2	21.0	AUG 21
MONTH															MONTH
JUL	19	43.2	8.2	42.0	64.0 55	28.8 60	100 70	90.5	11.7	93.0	10 60	19.0	5.4	20.0	JUL
AUG	18	43.9	9.7	43.5	59.4 60 M	25.7 67	100 70	92.4	13.7	100.0	9 69	16.6	4.5	16.0	AUG

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240219 FIREFIGHTER MTN LO

1975-1983

10-DAY AND MONTHLY PERIOD MEANS							10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	6	60.8	2.4	60.5	63.5 79	57.2 77	78 81	72.7	3.9	73.0	36 81	45.5	5.9	47.0	JUL 1
JUL 11	9	60.7	5.0	57.0	67.9 79	54.8 83	83 79	74.7	3.9	74.0	38 82	46.4	5.0	46.0	JUL 11
JUL 21	9	66.5	4.9	69.0	71.1 80	57.7 81	84 79	75.1	6.0	75.0	39 81	54.9	8.4	55.0	JUL 21
AUG 1	8	65.4	5.4	63.0	73.1 79	58.9 80	81 83	73.8	3.8	75.0	44 80	53.9	9.8	50.0	AUG 1
AUG 11	9	62.2	6.5	62.0	74.1 81	52.4 78	81 81	71.6	5.3	71.0	42 80	49.7	8.2	49.0	AUG 11
AUG 21	8	59.2	7.0	61.5	69.5 81	49.9 75	84 81	71.8	7.8	73.5	40 75	43.9	2.6	43.5	AUG 21
MONTH															MONTH
JUL	7	63.1	2.6	63.0	67.5 79	59.9 77	84 79	77.1	3.3	77.0	36 81	42.9	4.6	43.0	JUL
AUG	8	62.1	4.9	61.0	70.7 81	56.6 80	84 81	76.3	4.4	76.0	40 75	43.3	1.9	43.5	AUG

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION NUMBER 240219 FIREFIGHTER MTN LO

1975-1983

10-DAY AND MONTHLY PERIOD MEANS							10-DAY AND MONTHLY EXTREME DAILY VALUES								
PRD. BEGINS	NO. YRS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRD. BEGINS
JUL 1	6	55.8	11.6	52.0	78.8 78 M	47.4 80	100 78	86.3	9.7	85.0	23 80	34.8	16.3	29.0	JUL 1
JUL 11	9	60.6	13.4	63.0	76.5 83	34.4 79	100 82	89.8	13.9	94.0	16 79	36.6	10.8	40.0	JUL 11
JUL 21	9	50.5	10.6	52.0	65.8 83 M	35.0 79	100 77	77.8	16.8	83.0	20 82	29.9	9.7	28.0	JUL 21
AUG 1	8	49.5	15.3	50.0	74.9 76	24.2 79	100 76	75.3	24.4	83.0	17 79	33.9	10.8	36.5	AUG 1
AUG 11	9	58.3	11.1	62.0	73.1 78	38.9 79	100 80	88.7	16.6	100.0	23 79	36.0	9.8	37.0	AUG 11
AUG 21	8	61.2	11.2	58.5	76.1 77	42.2 81	100 81	94.0	8.4	100.0	22 81	33.9	5.8	34.0	AUG 21
MONTH															MONTH
JUL	7	54.7	7.4	56.0	61.6 78 M	39.8 79	100 82	95.3	10.1	100.0	16 79	23.9	4.6	25.0	JUL
AUG	8	56.3	9.7	58.0	66.6 76	41.0 79	100 81	99.1	2.5	100.0	17 79	28.5	8.8	30.0	AUG

(con.)

Table 33. (Con.)

DRY BULB TEMPERATURE

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION MT BROWN LO 1941-1958

PRO. BEGINS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	I	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRO. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS					I	10-DAY AND MONTHLY EXTREMES								
JUL 1	57.0	4.0	57.0	62.1 41	51.0 58	I	70 41	65.3	3.3	65.0	35 57	47.2	8.5	46.0	JUL 1
JUL 11	59.7	5.7	61.0	69.2 55	48.7 42	I	79 53	69.9	5.2	69.0	35 57	47.0	7.7	48.0	JUL 11
JUL 21	60.5	4.3	60.0	67.6 56	55.1 55	I	75 53	70.4	2.8	70.0	33 54	46.9	9.2	49.0	JUL 21
AUG 1	59.6	3.9	60.0	65.1 58	52.4 56	I	77 45	69.5	3.9	69.5	35 56	47.9	6.7	50.0	AUG 1
AUG 11	60.2	4.1	59.0	69.5 58	53.0 54	I	73 58	68.2	3.2	67.5	42 54	50.6	7.2	50.0	AUG 11
AUG 21	53.4	5.1	53.0	62.4 55	43.3 51	I	75 46	68.8	4.2	68.0	32 51	38.7	6.8	36.0	AUG 21
MONTH						I									MONTH
JUL	59.5	3.7	60.0	65.1 51	52.6 42	I	79 53	72.2	3.5	72.0	33 54	42.2	7.1	41.0	JUL
AUG	58.2	3.5	56.0	66.4 58	54.3 54	I	77 45	71.6	3.0	72.0	32 51	39.9	7.6	37.0	AUG

RELATIVE HUMIDITY

MEAN, STANDARD DEVIATION, AND EXTREME VALUES

STATION MT BROWN LO 1941-1958

PRO. BEGINS	MEAN	STD. DEV.	MEDIAN	HIGHEST AVG,YR	LOWEST AVG,YR	I	HIGH,YR	AVG. HIGH	STD. DEV.	MEDIAN HIGH	LOW,YR	AVG. LOW	STD. DEV.	MEDIAN LOW	PRO. BEGINS
	10-DAY AND MONTHLY PERIOD MEANS					I	10-DAY AND MONTHLY EXTREMES								
JUL 1	52.6	11.7	53.0	67.8 58	38.4 41	I	100 57	79.0	21.2	81.0	26 41	36.2	7.2	36.0	JUL 1
JUL 11	50.8	7.7	49.0	64.0 50	41.7 53	I	100 52	76.3	15.5	72.0	25 53	33.8	4.6	34.0	JUL 11
JUL 21	48.1	11.1	47.0	74.0 55	35.3 53	I	100 55	78.7	19.7	78.0	21 53	29.7	4.7	30.0	JUL 21
AUG 1	46.5	11.1	43.0	67.4 56	36.0 41	I	100 57	77.4	18.7	75.0	18 41	29.7	8.1	31.0	AUG 1
AUG 11	46.0	10.0	44.5	64.4 54	29.5 58	I	100 54	71.1	19.0	74.0	16 46	28.8	7.9	28.0	AUG 11
AUG 21	58.3	13.0	56.0	80.5 51	36.1 55	I	100 56	91.1	16.3	100.0	20 46	29.9	6.9	32.0	AUG 21
MONTH						I									MONTH
JUL	50.0	8.3	48.0	62.5 55	38.3 53	I	100 57	88.0	16.0	93.0	21 53	29.2	4.6	30.0	JUL
AUG	50.0	8.9	48.0	66.7 56	36.9 58	I	100 57	93.4	13.3	100.0	16 46	25.3	6.1	24.5	AUG

Table 34.--Frequency distribution of afternoon dry bulb temperature (°F) and relative humidity (percent); at 1600 m.s.t., based on years 1951-70 except as noted

DRY BULB TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240210 POLEBRIDGE RS 1951-1970

TEMPERATURE VALUES

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JUL 1										5	5	16	89	84	121	158	168	168	137	47			JUL 1
JUL 11													20	40	95	145	175	210	205	90	20		JUL 11
JUL 21												9	23	41	36	86	209	223	236	127	9		JUL 21
AUG 1												5	47	42	95	137	179	189	189	89	26		AUG 1
AUG 11												15	55	55	40	125	170	220	195	100	25		AUG 11
AUG 21											9	50	118	132	114	150	132	118	95	73	9		AUG 21
SEP 1										11	44	61	100	94	144	144	128	139	89	33	11		SEP 1
SEP 11									8	31	54	92	154	131	108	77	169	154	15	8			SEP 11
SEP 21										40	147	107	147	200	67	120	93	40	40				SEP 21
MONTH																							MONTH
JUL										2	2	8	43	54	82	128	185	202	195	90	10		JUL
AUG											3	25	75	79	84	138	159	174	157	87	20		AUG
SEP									3	23	68	81	127	127	117	117	135	125	55	18	5		SEP

RELATIVE HUMIDITY

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240210 POLEBRIDGE RS 1951-1970

HUMIDITY VALUES

PRD. BEGINS	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100	PRD. BEGINS
JUL 1			21	79	126	137	84	153	79	37	58	42	68	26	5	32	11	32	11			JUL 1
JUL 11				75	160	205	165	100	85	50	70	25	20	10	20	5	5		5			JUL 11
JUL 21		5	59	164	236	136	118	114	50	32	14	23	5	5	14		14	9	5			JUL 21
AUG 1		16	37	168	168	142	84	89	74	47	26	11	21	37	5	26	16	21	5		5	AUG 1
AUG 11		5	80	190	170	110	135	70	70	15	30	25	5	30	20	10	25	5	5			AUG 11
AUG 21		5	45	150	145	77	73	100	59	41	68	36	41	55	27	23	23	23	9			AUG 21
SEP 1		6	44	72	172	156	83	100	61	50	67	50	28	11	17	28	17	17	22			SEP 1
SEP 11		8		46	123	169	108	69	62	54	115	38	31	31	46	23	8	54	15			SEP 11
SEP 21		13	40	40	40	107	67	53	160	13	40	80	53	53	53	27	27	53	67		13	SEP 21
MONTH																						MONTH
JUL		2	28	108	177	159	123	121	70	39	46	30	30	13	13	11	10	13	7			JUL
AUG		8	54	169	161	108	97	87	67	34	43	25	23	41	18	20	21	16	7		2	AUG
SEP		8	29	57	130	151	88	81	81	44	78	52	34	26	34	26	16	36	29		3	SEP

(con.)

Table 34. (Con.)

DRY BULB TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240217 HUNGRY HORSE RS (INCLUDES CORAM RS, 1951-1957) 1951-1970

TEMPERATURE VALUES

PRO. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRO. BEGINS
MAY 1									11	46	184	149	138	103	138	149	46	23	11				MAY 1
MAY 11									47	47	103	65	112	159	187	150	112	19					MAY 11
MAY 21									7	34	62	117	138	159	138	138	97	83	28				MAY 21
JUN 1										6	40	69	120	171	217	143	131	74	29				JUN 1
JUN 11										5	22	82	120	158	131	191	137	104	38	11			JUN 11
JUN 21											45	73	73	147	147	186	147	96	85				JUN 21
JUL 1										5	11	21	48	116	79	164	153	201	159	42			JUL 1
JUL 11													10	55	75	106	186	211	246	85	20	5	JUL 11
JUL 21												5	14	55	32	64	195	227	295	100	14		JUL 21
AUG 1												5	25	40	90	130	150	225	205	110	10	10	AUG 1
AUG 11												15	40	55	50	100	160	260	210	80	30		AUG 11
AUG 21											14	68	77	118	141	155	136	136	77	68	5	5	AUG 21
SEP 1										10	25	86	81	121	126	197	116	126	91	15	5		SEP 1
SEP 11									10	57	26	161	93	119	130	135	150	104	10	5			SEP 11
SEP 21									6	76	76	111	146	140	105	146	117	47	29				SEP 21
OCT 1								24	24	48	79	183	198	135	135	143	32						OCT 1
OCT 11									56	120	278	194	167	148	19	19							OCT 11
OCT 21						9	9	84	178	215	159	178	131	37									OCT 21
MONTH																							MONTH
MAY									21	41	106	109	130	145	153	145	88	47	15				MAY
JUN										4	36	75	105	159	164	174	138	92	50	4			JUN
JUL										2	3	8	23	74	61	109	179	214	237	77	12	2	JUL
AUG											5	31	48	73	95	129	148	205	161	85	15	5	AUG
SEP									5	46	41	119	105	126	121	160	128	94	44	7	2		SEP
OCT						3	3	35	82	123	167	185	167	109	56	59	12						OCT

RELATIVE HUMIDITY

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240217 HUNGRY HORSE RS (INCLUDES CORAM RS, 1951-1957) 1951-1970

HUMIDITY VALUES

PRO. BEGINS	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100	PRO. BEGINS
MAY 1			46	57	149	184	34	92	57	34	57	69	46	34	57	23	11	34	11			MAY 1
MAY 11				84	140	121	150	112	75	56	37	56	9	37	28	19	28	37	9			MAY 11
MAY 21			21	55	110	138	97	90	62	90	110	28	21	34	41	34	21	28	21			MAY 21
JUN 1		6		29	57	86	183	131	109	80	69	57	17	23	17	23	34	46	23	11		JUN 1
JUN 11			11	22	38	164	158	153	82	66	44	44	27	44	33	33	27	38	16			JUN 11
JUN 21			6	51	85	164	181	107	85	40	45	45	34	11	17	11	28	40	28	11	11	JUN 21
JUL 1			26	63	138	164	153	116	69	37	69	26	32	21	5	16	21	11	26	5		JUL 1
JUL 11			45	75	176	261	146	106	30	60	30	25	10	10	5			15	5			JUL 11
JUL 21		14	105	173	205	205	109	55	36	14	27	5	14	5		9	9	14	5			JUL 21
AUG 1		5	100	170	155	195	85	85	35	5	30	40	15	10		25	20	5	20			AUG 1
AUG 11		25	100	160	235	165	90	60	45	15	15	20	10	5	15	15	5	15	5			AUG 11
AUG 21		5	50	132	100	141	100	86	91	32	50	36	18	32	14	27	36	18	27		5	AUG 21
SEP 1			40	106	111	131	121	96	101	61	56	20	35	10	15	35	15	15	20		10	SEP 1
SEP 11		5		47	114	166	109	93	88	83	62	26	26	26	31	41	31	26	26			SEP 11
SEP 21			12	41	70	123	105	76	111	135	70	70	23	29	12	23	23	41	23	6	6	SEP 21
OCT 1			8	8	63	127	111	71	103	56	95	71	40	40	48	48	8	48	32	8	16	OCT 1
OCT 11				9	9	56	111	102	83	93	93	93	37	65	93	28	28	37	65			OCT 11
OCT 21					9		56	56	47	84	84	65	94	56	103	93	93	37	121		9	OCT 21
MONTH																						MONTH
MAY			21	65	130	145	97	97	65	65	74	47	24	35	41	27	21	32	15			MAY
JUN		2	6	34	60	138	174	131	92	62	52	49	26	26	22	22	30	41	22	7	4	JUN
JUL		5	61	107	174	211	135	90	44	36	41	18	18	12	3	8	10	13	12	2		JUL
AUG		11	82	153	161	166	92	77	58	18	32	32	15	16	10	23	21	13	18		2	AUG
SEP		2	18	66	100	141	112	89	100	91	62	37	28	21	20	34	23	27	23	2	5	SEP
OCT			3	6	29	65	94	76	79	76	91	76	53	53	79	56	41	41	70	3	9	OCT

(con.)

Table 34. (Con.)

DRY BULB TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240301 BELLY RIVER RS

1951-1970

TEMPERATURE VALUES

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JUN 21									8	40	111	119	190	198	151	119	48	16					JUN 21
JUL 1										12	24	88	129	106	182	200	176	82					JUL 1
JUL 11											5	30	75	100	165	200	270	110	35	10			JUL 11
JUL 21											14	23	73	86	155	218	286	114	23	9			JUL 21
AUG 1											16	42	89	105	137	237	179	147	37	5	5		AUG 1
AUG 11										5	35	35	75	101	151	216	231	95	45	10			AUG 11
AUG 21									5	23	77	105	100	200	114	155	118	82	18	5			AUG 21
SEP 1								18	41	53	94	88	112	106	171	106	124	76	6	6			SEP 1
SEP 11							10	21	21	73	104	115	83	177	135	177	52	21	10				SEP 11
MONTH																							MONTH
JUL										3	14	44	90	97	166	207	249	103	20	7			JUL
AUG									2	10	44	62	89	138	133	200	174	107	33	7	2		AUG

RELATIVE HUMIDITY

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240301 BELLY RIVER RS

1951-1970

HUMIDITY VALUES

PRD. BEGINS	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100	PRD. BEGINS
JUN 21			8	16	48	63	56	111	63	119	111	71	56	48	40	16	40	24	95		16	JUN 21
JUL 1					41	88	147	124	129	100	47	76	47	29	59	29	53	24	6			JUL 1
JUL 11				15	70	125	165	140	125	100	65	40	55	20	25	10	20	10	15			JUL 11
JUL 21			14	27	109	150	145	141	73	64	41	68	41	32	45	14	18	9	9			JUL 21
AUG 1		5	5	74	100	132	126	105	84	89	42	53	26	26	21	16	32	32	32			AUG 1
AUG 11			30	30	121	196	111	85	90	60	45	65	45	15	20	30	15	15	25			AUG 11
AUG 21			9	36	114	105	91	82	64	109	95	59	45	41	18	41	36	14	36		5	AUG 21
SEP 1			6	35	88	71	112	112	88	76	71	76	24	18	18	41	41	29	65	6	24	SEP 1
SEP 11				21	63	73	125	115	146	52	63	73	42	21	42	21	10	31	63		42	SEP 11
MONTH																						MONTH
JUL			5	15	76	124	153	136	107	86	51	61	47	27	42	17	29	14	10			JUL
AUG		2	15	46	112	143	108	90	79	87	62	59	39	28	20	30	28	20	31		2	AUG

DRY BULB TEMPERATURE

PERCENTAGE FREQUENCY DISTRIBUTION OF DAILY VALUES
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240303 SAINT MARY RS

1951-1970

TEMPERATURE VALUES

PRD. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRD. BEGINS
JUN 11										12	62	123	160	173	173	123	99	62	12				JUN 11
JUN 21										8	39	78	180	180	164	188	94	55	16				JUN 21
JUL 1										13	7	53	160	153	127	207	127	93	53	7			JUL 1
JUL 11											11	21	32	53	121	226	247	174	84	21	11		JUL 11
JUL 21												25	30	71	91	167	237	258	101	20			JUL 21
AUG 1											11	37	53	117	96	149	223	191	85	32	5		AUG 1
AUG 11										5	5	32	32	79	132	200	232	179	84	21			AUG 11
AUG 21									5	14	62	86	86	148	177	110	129	129	48		5		AUG 21
SEP 1								13	38	64	64	108	153	127	127	146	96	51	13				SEP 1
SEP 11								13	63	75	88	163	138	100	113	213	13	25					SEP 11
MONTH																							MONTH
JUL										4	6	32	67	87	112	199	210	182	82	17	4		JUL
AUG									2	7	27	53	58	116	136	152	193	165	72	17	3		AUG

(con.)

Table 34. (Con.)

RELATIVE HUMIOITY

PERCENTAGE FREQUENCY OISTRIBUTION OF OAILY VALUES
-GIVEN TO TENTHS PERCENT, OECIMAL POINT OMITTEO

STATION NUMBER 240303 SAINT MARY RS 1951-1970

HUMIOITY VALUES

PRO. BEGINS	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100	PRO. BEGINS
JUN 11				25	49	99	86	148	74	111	62	111	37	62	12	49	12	37			25	JUN 11
JUN 21			16	23	78	86	156	109	133	63	78	78	47	23	31	8		47	23			JUN 21
JUL 1			13	93	73	93	80	167	100	40	67	67	40	73	20	7	20	20	27			JUL 1
JUL 11		5	32	42	142	137	168	116	111	74	32	58	5	26	16	11	11	11			5	JUL 11
JUL 21		5	40	146	177	167	96	91	66	35	35	51	25	20	10	10		15	10			JUL 21
AUG 1		5	27	96	165	122	133	90	69	32	96	27	21	21	21	5	27	37	5			AUG 1
AUG 11		11	63	100	168	147	111	95	89	53	53	42	5	11	5	16	11	21				AUG 11
AUG 21			19	72	129	144	53	110	96	81	53	33	38	72	19	24	19	19	14		5	AUG 21
SEP 1		6	19	19	64	127	108	121	70	70	76	45	32	64	13	45	25	45	32		19	SEP 1
SEP 11				25	100	113	38	75	88	100	63	38	25	50	50	88	25	25	75		25	SEP 11
MONTH																						MONTH
JUL		4	30	95	136	136	117	121	91	50	43	58	22	37	15	9	9	15	11		2	JUL
AUG		5	36	89	153	138	97	99	85	56	66	34	22	36	15	15	19	26	7		2	AUG

ORY BULB TEMPERATURE

PERCENTAGE FREQUENCY OISTRIBUTION OF OAILY VALUES
-GIVEN TO TENTHS PERCENT, OECIMAL POINT OMITTEO

STATION NUMBER 240206 OESERT MTN LO 1951-1970

TEMPERATURE VALUES

PRO. BEGINS	BELOW 0	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100 AND ABOVE	PRO. BEGINS
JUL 1								12	6	59	112	95	112	195	148	148	101	12					JUL 1
JUL 11										15	40	60	100	165	165	245	155	45	10				JUL 11
JUL 21									5	18	36	36	59	127	205	277	205	27	5				JUL 21
AUG 1									5	25	45	85	100	145	220	200	115	55	5				AUG 1
AUG 11									10	10	56	61	56	158	245	209	117	71	5				AUG 11
AUG 21									36	115	94	104	120	156	151	99	68	42	10	5			AUG 21
MONTH																							MONTH
JUL								3	3	29	59	61	88	160	175	229	158	29	5				JUL
AUG									17	49	65	83	92	153	206	170	100	56	7	2			AUG

RELATIVE HUMIOITY

PERCENTAGE FREQUENCT OISTRIBUTION OF OAILY VALUES
-GIVEN TO TENTHS PERCENT, OECIMAL POINT OMITTEO

STATION NUMBER 240206 OESERT MTN LO 1951-1970

HUMIOITY VALUES

PRO. BEGINS	0 TO 4	5 TO 9	10 TO 14	15 TO 19	20 TO 24	25 TO 29	30 TO 34	35 TO 39	40 TO 44	45 TO 49	50 TO 54	55 TO 59	60 TO 64	65 TO 69	70 TO 74	75 TO 79	80 TO 84	85 TO 89	90 TO 94	95 TO 99	100	PRO. BEGINS
JUL 1			12	6	65	95	118	71	71	101	47	118	41	30	47	12	41	47	36		41	JUL 1
JUL 11			5	20	60	115	195	115	110	105	70	40	20	60	20	25	5		30		5	JUL 11
JUL 21			27	27	164	150	191	141	59	45	45	32	14	14	14	14	14	9	18		23	JUL 21
AUG 1			10	40	110	145	160	100	60	50	45	60	30	15	35	30	25	25	15		45	AUG 1
AUG 11		5	26	87	133	122	168	107	92	56	41	15	26	20	15	10	10	10	46		10	AUG 11
AUG 21			10	42	141	78	120	57	73	78	63	36	21	26	57	5	21	42	42		89	AUG 21
MONTH																						MONTH
JUL			15	19	100	122	171	112	80	81	54	59	24	34	25	17	19	17	27		22	JUL
AUG		2	15	56	128	116	150	88	75	61	49	37	26	20	36	15	19	26	34		48	AUG

Table 35.--Windspeed (mi/h), average and frequency distribution by direction; at about 1600 m.s.t., based on years 1951-70 except as noted (1300 m.s.t. data beginning in 197

WIND SPEED - DIRECTION
PERCENTAGE FREQUENCY OF OCCURRENCE BY DIRECTION FOR SELECTED SPEED INCREMENTS
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240210 POLEBRIDGE RS 1951-1970

MONTH JUL — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	3	6	1	2									4	7	3.8
E															
SE															
S	7	13	12	22	11	21	2	4					32	60	6.6
SW	113	212	177	331	72	135	14	26			1	2	377	706	5.6
W	18	34	28	52	16	30	2	4					64	120	5.7
NW	10	19	11	21	6	11	1	2					28	52	5.4
N	1	2	2	4	5	9	1	2					9	17	8.1
CLM	20	37											20	37	.0
TOT	172	322	231	433	110	206	20	37			1	2	534		5.5

MONTH AUG — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	1	2	2	4									3	5	3.7
E	2	4											2	4	3.0
SE															
S	3	5	9	16	10	18							22	39	7.1
SW	95	167	197	347	81	143	14	25					387	681	5.6
W	13	23	52	92	23	40	1	2					89	157	5.9
NW	3	5	16	28	6	11	2	4					27	48	6.7
N	4	7	4	7	4	7							12	21	5.9
CLM	26	46											26	46	.0
TOT	147	259	280	493	124	218	17	30					568		5.5

STATION NUMBER 240217 HUNGRY HORSE RS 1958-1970

MONTH JUN — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	8	26	12	39	2	6							22	71	4.1
E	10	32	6	19	1	3	1	3					18	58	4.2
SE	6	19	8	26	8	26							22	71	5.5
S	8	26	7	23	4	13							19	62	5.1
SW	5	16	10	32	6	19							21	68	6.1
W	14	45	19	62	12	39	3	10	1	3			49	159	6.2
NW	12	39	49	159	23	75	2	6					86	279	6.2
N	9	29	31	101	24	78	2	6			1	3	67	218	6.9
CLM	4	13											4	13	.0
TOT	76	247	142	461	80	260	8	26	1	3	1	3	308		5.9

MONTH JUL — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	12	31	11	29	4	10	1	3					28	73	4.9
E	5	13	6	16	3	8							14	37	4.7
SE	7	18	4	10	4	10							15	39	4.4
S	2	5	5	13	4	10	1	3					12	31	6.7
SW	6	16	8	21	1	3	1	3					16	42	4.9
W	13	34	36	94	18	47	2	5	1	3			70	184	6.5
NW	19	50	76	199	32	84			1	3			128	336	6.1
N	10	26	43	113	40	105	4	10	1	3			98	257	7.2
CLM															
TOT	74	194	189	496	106	278	9	24	3	8			381		6.2

MONTH AUG — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	10	26	5	13	4	10	1	3					20	51	4.8
E	6	15	8	21	3	8							17	44	4.5
SE	9	23	8	21	3	8	1	3					21	54	5.2
S	6	15	11	28	7	18			1	3			25	64	6.4
SW	10	26	9	23	3	8							22	57	4.5
W	19	49	40	103	11	28	2	5					72	185	5.4
NW	36	93	69	177	24	62	5	13					134	344	5.6
N	14	36	29	75	31	80	4	10					78	201	6.9
CLM															
TOT	110	283	179	460	86	221	13	33	1	3			389		5.7

MONTH SEP — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	13	40	6	18	1	3	1	3					21	64	4.0
E	8	24	3	9	3	9	1	3					15	46	4.7
SE	9	28	9	28	4	12							22	67	4.8
S	31	95	9	28	4	12							44	135	3.2
SW	21	64	18	55	3	9							42	128	4.0
W	29	89	35	107	7	21	2	6					73	223	4.8
NW	32	98	32	98	9	28	1	3					74	226	4.5
N	9	28	18	55	8	24	1	3					36	110	5.6
CLM															
TOT	152	465	130	398	39	119	6	18					327		4.4

STATION NUMBER 240301 BELLY RIVER RS 1951-1970

MONTH JUL — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	10	18	21	37	3	5							34	60	4.6
E	1	2											1	2	2.0
SE	1	2	5	9	4	7	3	5					13	23	9.0
S	5	9	33	58	65	115	28	49	9	16	2	4	142	251	10.5
SW	13	23	78	138	138	244	51	90	5	9	2	4	287	507	9.6
W	1	2	5	9	12	21	6	11					24	42	9.6
NW	2	4	5	9	2	4							9	16	6.1
N	14	25	27	48	7	12							48	85	4.8
CLM	8	14											8	14	.0
TOT	55	97	174	307	231	408	88	155	14	25	4	7	566		8.9

MONTH AUG — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	8	13	14	23	2	3							24	40	4.6
E	1	2	2	3	1	2							4	7	5.2
SE			3	5	5	8	2	3	1	2			11	18	9.7
S	11	18	32	54	67	112	29	49	3	5			142	238	9.4
SW	21	35	61	102	120	201	72	121	11	18	3	5	288	483	10.3
W	1	2	8	13	9	15	5	8	1	2			24	40	10.0
NW	2	3	9	15	1	2							12	20	5.3
N	28	47	40	67	10	17							78	131	4.6
CLM	13	22											13	22	.0
TOT	85	143	169	284	215	361	108	181	16	27	3	5	596		8.7

STATION NUMBER 240303 ST MARY RS 1951-1970

MONTH JUL — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE			7	14	9	18	2	4					18	37	8.4
E			10	20	7	14	3	6					20	41	8.8
SE	1	2	4	8	4	8							9	18	7.3
S	5	10	6	12	6	12	3	6	1	2			21	43	7.7
SW	12	24	55	112	112	228	42	85	6	12			227	461	9.7
W	23	47	44	89	63	128	18	37	2	4			150	305	8.1
NW	3	6	7	14	11	22			1	2			22	45	8.0
N	6	12	8	16	4	8	2	4	1	2			21	43	6.7
CLM	4	8											4	8	.0
TOT	54	110	141	287	216	439	70	142	11	22			492		8.7

MONTH AUG — WIND SPEED, MPH

DIR.	0-3 N.	0-3 PCT	4-7 N.	4-7 PCT	8-12 N.	8-12 PCT	13-18 N.	13-18 PCT	19-24 N.	19-24 PCT	>24 N.	>24 PCT	TOTAL N.	TOTAL PCT	AVG SPEED
NE	3	6	14	27	11	21	1	2					29	56	7.2
E	3	6	8	15	8	15	3	6					22	42	7.4
SE	3	6	4	8	9	17	1	2					17	33	8.3
S	1	2	7	13	10	19	5	10					23	44	9.1
SW	20	38	52	100	141	271	50	96	5	10	2	4	270	518	9.7
W	11	21	26	50	61	117	26	50	2	4			126	242	9.7
NW	3	6	2	4	4	8	1	2			1	2	11	21	8.5
N	1	2	5	10	9	17	1	2					16	31	7.6
CLM	7	13											7	13	.0
TOT	52	100	119	226	253	486	88	169	7	13	3	6	521		9.2

(con.)

Table 35. (Con.)

WIND SPEED - DIRECTION
PERCENTAGE FREQUENCY OF OCCURRENCE BY DIRECTION FOR SELECTED SPEED INCREMENTS
-GIVEN TO TENTHS PERCENT. DECIMAL POINT OMITTED

STATION NUMBER 240202 BIG CREEK R.S. 1964-1982

MONTH JUN — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	11	71	9	58	3	19							23	149	4.2
E	2	13	3	19									5	32	4.6
SE	24	162	27	175	8	52							60	390	4.6
S			1	6									1	6	5.0
SW	10	65	12	78	5	32							27	175	4.7
W	6	39	6	39									12	78	3.8
NW	13	84	7	45	1	6	1	6					22	143	3.8
N	4	26											4	26	2.0
CLM															
TOT	71	461	65	422	17	110	1	6					154		4.3

MONTH JUL — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	22	43	20	39	13	25	1	2	1	2			57	110	5.1
E	7	14	12	23	8	15							27	52	5.7
SE	61	118	72	139	40	77	10	19			1	2	184	356	5.8
S	8	15	14	27	5	10							27	52	4.8
SW	31	60	30	58	17	33	1	2					79	153	5.1
W	23	44	30	58	14	27							67	130	4.9
NW	25	48	16	31	9	17	2	4					52	101	4.6
N	10	19	7	14	2	4	1	2					20	39	4.3
CLM	4	8											4	8	.0
TOT	191	369	201	389	108	209	15	29	1	2	1	2	517		5.2

MONTH AUG — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	10	19	42	80	5	10							57	109	5.2
E	9	17	19	36	17	33							45	86	6.0
SE	47	90	61	117	45	86	6	11					159	305	6.0
S	11	21	19	36	8	15	2	4					40	77	6.0
SW	21	40	36	69	19	36	3	6			1	2	80	153	6.1
W	23	44	29	56	9	17	2	4					63	121	5.1
NW	19	36	26	50	4	8	2	4					51	98	5.0
N	9	17	7	13	2	4	1	2					19	36	4.6
CLM	8	15											8	15	.0
TOT	157	301	239	458	109	209	16	31			1	2	522		5.6

MONTH SEP — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	12	33	22	60	10	27	2	5	1	3			47	127	6.0
E	4	11	11	30	7	19			1	3			23	62	6.6
SE	38	103	54	146	29	79	2	5					123	333	5.3
S	6	16	11	30	10	27	1	3					28	76	6.4
SW	21	57	18	49	10	27	1	3					50	136	5.2
W	15	41	15	41	11	30	1	3					42	114	5.7
NW	17	46	11	30	2	5							30	81	3.8
N	11	30	7	19	4	11							22	60	4.2
CLM	4	11											4	11	.0
TOT	128	347	149	404	83	225	7	19	2	5			369		5.3

STATION NUMBER 240207 WEST GLACIER 1963-1982

MONTH JUN — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	7	20	20	56	4	11							31	87	4.9
E	9	25	7	20	5	14							21	59	4.6
SE	7	20	12	34	2	6							21	59	4.8
S	6	17	16	45	8	23	2	6					32	90	6.3
SW	29	82	69	194	44	124	8	23					150	423	6.5
W	15	42	23	65	21	59	8	23					67	189	7.0
NW	8	23	9	25									17	48	3.8
N	7	20	7	20	2	6							16	45	4.4
CLM															
TOT	88	248	163	459	86	242	18	51					355		6.0

MONTH JUL — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	6	12	13	26	5	10	1	2					25	49	5.5
E	12	24	10	20	1	2	1	2					24	47	4.9
SE	3	6	17	33	4	8			1	2			25	49	6.4
S	13	26	13	26	10	20	1	2					37	73	5.8
SW	69	136	123	242	65	128	22	43					279	548	6.2
W	20	39	28	55	22	43	8	16	1	2			79	155	6.9
NW	6	12	10	20	4	8	1	2					21	41	6.0
N	7	14	4	8	4	8	2	4					17	33	5.7
CLM	2	4											2	4	.0
TOT	138	271	218	428	115	226	36	71	2	4			509		6.2

MONTH AUG — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	14	27	25	49	4	8	1	2					44	86	4.8
E	7	14	12	23	4	8	1	2					24	47	5.2
SE	3	6	7	14	4	8							14	27	5.4
S	5	10	29	57	2	4	2	4					38	74	6.0
SW	60	117	109	213	75	147	23	45	1	2			268	524	6.8
W	8	16	35	68	15	29	5	10					63	123	6.8
NW	10	20	16	31	7	14							33	65	5.2
N	5	10	15	29	5	10							25	49	5.6
CLM	2	4											2	4	.0
TOT	114	223	248	485	116	227	32	63	1	2			511		6.3

MONTH SEP — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	3	12	11	44	1	4							15	60	5.1
E	4	16	12	48	4	16							20	81	5.4
SE	7	28	6	24									13	52	4.3
S	2	8	2	8	2	8							6	24	5.8
SW	31	125	60	242	36	145	6	24	2	8			135	544	6.3
W	4	16	23	93	14	56	3	12					44	177	7.1
NW	3	12	4	16	1	4							8	32	5.0
N	4	16	3	12									7	28	4.1
CLM															
TOT	58	234	121	488	58	234	9	36	2	8			248		6.1

STATION NUMBER 240206 DESERT MTN 1951-1970

MONTH JUL — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	12	21	6	10	2	3					2	3	22	38	5.7
E	10	17	16	28	2	3							28	49	4.4
SE	4	7	6	10	1	2							11	19	3.8
S	8	14	10	17	1	2							19	33	4.2
SW	46	80	174	303	50	87	5	9					275	479	5.7
W	28	49	104	181	62	108	4	7	1	2			199	347	6.4
NW	3	5	12	21	1	2							16	28	5.1
N	2	3											2	3	3.0
CLM	2	3											2	3	.0
TOT	115	200	328	571	119	207	9	16	1	2	2	3	574		5.7

MONTH AUG — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	7	12	10	17	4	7							21	36	4.7
E	16	28	14	24	2	3							32	55	3.7
SE	6	10	2	3	1	2							9	16	3.8
S	1	2	6	10									7	12	4.6
SW	48	83	178	308	64	111	7	12					297	515	6.0
W	41	71	89	154	61	106	3	5	1	2			195	338	6.3
NW	1	2	10	17	4	7							15	26	5.9
N	1	2											1	2	3.0
CLM															
TOT	121	210	309	536	136	236	10	17	1	2			577		5.8

MT BROWN LO 1941-1958

MONTH JUL — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	2	6	4	13									6	19	3.7
E	1	3	1	3	2	6	1	3					5	16	9.2
SE	7	22	8	25	5	16	1	3					21	66	5.9
S	3	9	5	16	3	9	1	3	2	6			14	44	8.2
SW	14	44	54	170	83	261	34	107	10	31	1	3	196	616	9.8
W	6	19	21	66	22	69	7	22			1	3	57	179	8.3
NW	6	19	3	9	5	16	1	3	1	3			16	50	7.0
N	3	9											3	9	2.3
CLM															
TOT	42	132	96	302	120	377	45	142	13	41	2	6	318		8.8

MONTH AUG — WIND SPEED, MPH

DIR.	0-3 N.	PCT	4-7 N.	PCT	8-12 N.	PCT	13-18 N.	PCT	19-24 N.	PCT	>24 N.	PCT	TOTAL N.	PCT	AVG SPEED
NE	2	5	1	3	3	8	1	3					7	18	8.1
E	2	5	2	5	3	8	4	10	3	8			14	36	12.4
SE	7	18	10	26	4	10	2	5					23	60	5.9
S	1	3	19	49	5	13	4	10	1	3			30	78	8.3
SW	20	52	71	184	68	177	41	106	15	39	4	10	219	569	9.9
W	4	10	18	47	24	62	8	21	1	3	1	3	56	145	9.2
NW	12	31	9	23	5	13	1	3					27	70	5.4
N	3	8	1	3			1	3					5	13	5.4
CLM	4	10											4	10	.0
TOT	55	143	131	340	112	291	62	161	20	52	5	13	385		9.0

(con.)

Table 36.--Frequency distribution of three-way combinations of dry bulb temperature (°F), relative humidity (percent), and windspeed (mi/h); at 1600 m.s.t., based on years 1951-70 except as noted

TEMPERATURE - RELATIVE HUMIDITY - WINDSPEED
PERCENTAGE FREQUENCY OF OCCURRENCE FOR SELECTED COMBINATIONS
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240210 POLEBRIDGE RS 1951-1970

MONTH JUL

WIND SPEED 0-4 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99		4								
90-94		7	16	5						
85-89		21	39	14						
80-84		4	30	23	7	2				
75-79		4	32	32	11	4				
70-74		2	16	21	12	9	4			
65-69				12	5	27	5	4	2	
60-64					4	7	14	4		
55-59					5	5	5	7	2	5
50-54						2		2	5	
45-49									2	
40-44									2	
35-39										
30-34										
<30										
TOTAL		41	133	109	44	55	28	16	12	5
NUMBER	0	23	75	61	25	31	16	9	7	3

WIND SPEED 5-9 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99		5	2							
90-94		27	20							
85-89	2	36	50	12						
80-84	2	14	48	32	9					
75-79		9	30	27	21					
70-74			14	21	9			2		
65-69			2	2	5	4		4		
60-64				2	2	7		5		
55-59						2	2		4	
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	4	91	165	96	46	12	2	11	4	
NUMBER	2	51	93	54	26	7	1	6	2	0

WIND SPEED 10-14 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94	4	7	5	2						
85-89		16	7	4						
80-84		7	9	4	2					
75-79			5	5	2					
70-74			5	4	2					
65-69			4	5						
60-64					2		2		2	
55-59					2	2				
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	4	30	36	23	9	2	2		2	
NUMBER	2	17	20	13	5	1	1	0	1	0

WIND SPEED 15-19 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94		2								
85-89		2								
80-84			5	2						
75-79			4	2						
70-74										
65-69										
60-64										
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL		4	9	4						
NUMBER	0	2	5	2	0	0	0	0	0	0

WIND SPEED GREATER/EQUAL 20 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94			2							
85-89										
80-84										
75-79										
70-74										
65-69										
60-64										
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL			2							
NUMBER	0	0	1	0	0	0	0	0	0	0

TEMP. DEG F	TOTAL	NUMBER
<100		0
95-99	11	6
90-94	96	54
85-89	203	114
80-84	199	112
75-79	187	105
70-74	121	68
65-69	80	45
60-64	50	28
55-59	41	23
50-54	9	5
45-49	2	1
40-44	2	1
35-39		0
30-34		0
<30		0
TOTAL	1000	
NUMBER		562

STATION NUMBER 240210 POLEBRIDGE RS 1951-1970

MONTH AUG

WIND SPEED 0-4 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99		9								
90-94		17	3							
85-89		15	19							
80-84	2	9	19	17	3					
75-79		9	34	22	10					
70-74		3	10	19	22	12	5			
65-69			3	9	9	14	2	7	2	
60-64				2	3	10	10	3	5	
55-59					3	2	14	15	10	3
50-54					3	2			3	3
45-49									3	
40-44										
35-39										
30-34										
<30										
TOTAL	2	62	89	69	55	39	31	26	24	7
NUMBER	1	36	52	40	32	23	18	15	14	4

WIND SPEED 5-9 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99	3									
90-94		45	3							
85-89		70	31	10						
80-84	3	24	60	14	3					
75-79		14	34	22	2					
70-74		2	14	26	9	3	3			
65-69			3	14	10	5	2			
60-64				9	10	3	14		2	
55-59					2	3	3	3		
50-54							5	3	2	
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	7	154	146	94	36	15	27	7	3	
NUMBER	4	90	85	55	21	9	16	4	2	0

WIND SPEED 10-14 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99	3	3								
90-94		19		2						
85-89		10	5	2						
80-84		9	12	2						
75-79			5	2						
70-74		2	2	7		2				
65-69				2	2					
60-64					2					2
55-59							2	2		
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	3	43	24	15	3	2	2	2		2
NUMBER	2	25	14	9	2	1	1	1	0	1

WIND SPEED 15-19 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99		2								
90-94		2								
85-89		2								
80-84		2								
75-79			2							
70-74			2							
65-69										
60-64										
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL		7	3							
NUMBER	0	4	2	0	0	0	0	0	0	0

WIND SPEED GREATER/EQUAL 20 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89										
80-84										
75-79										
70-74										
65-69										
60-64										
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL										
NUMBER	0	0	0	0	0	0	0	0	0	0

TEMP. DEG F	TOTAL	NUMBER
<100		0
95-99	21	12
90-94	91	53
85-89	165	96
80-84	178	104
75-79	156	91
70-74	142	83
65-69	82	48
60-64	75	44
55-59	63	37
50-54	22	13
45-49	3	2
40-44		0
35-39		0
30-34		0
<30		0
TOTAL	1000	
NUMBER		583

(con.)

Table 36. (Con.)

TEMPERATURE - RELATIVE HUMIDITY - WINDSPEED
PERCENTAGE FREQUENCY OF OCCURRENCE FOR SELECTED COMBINATIONS
-GIVEN IN TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240217 HUNGRY HORSE RS 1958-1970

MONTH JUL

WIND SPEED 0-4 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94		13	15							
85-89		49	18							
80-84		8	36	10	3					
75-79			18	0	15	3				
70-74			8	13	8	3	3			
65-69				8		3		3		3
60-64						10		5	0	3
55-59						3	3	3		3
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL		69	95	46	26	21	5	10	0	0
NUMBER	0	27	37	10	10	8	2	4	3	3

WIND SPEED 5-9 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100	3									
95-99		15								
90-94		20	10							
85-89	3	54	77	10						
80-84		21	77	21						
75-79		18	39	31	10	10				
70-74		5	21	33	15	3				
65-69				10	13	3				
60-64				5	8	0		5	3	
55-59						3	3		3	
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	5	141	231	111	46	26	3	5	5	
NUMBER	2	55	90	43	10	10	1	2	2	0

WIND SPEED 10-14 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94		8	3							
85-89	5	13	13							
80-84	3	5	13	3						
75-79		3	3	5	1					
70-74			5	3		5				
65-69			5	3	8	3				
60-64				3	3	3				
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	0	20	41	15	13	10				
NUMBER	3	11	16	6	5	4	0	0	0	0

WIND SPEED 15-19 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89	3									
80-84		3		3						
75-79		1		3						
70-74			5							
65-69										
60-64										
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	3	5	5	5						
NUMBER	1	2	2	2	0	0	0	0	0	0

WIND SPEED GREATER/EQUAL 20 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89										
80-84										
75-79				3						
70-74		3								
65-69										
60-64										
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL		3		3						
NUMBER	0	1	0	1	0	0	0	0	0	0

TEMP. DEG F	TOTAL	NUMBER
<100	3	1
95-99	15	6
90-94	85	33
85-89	244	95
80-84	211	82
75-79	172	67
70-74	131	51
65-69	59	23
60-64	62	24
55-59	10	7
50-54		0
45-49		0
40-44		0
35-39		0
30-34		0
<30		0
TOTAL	1000	
NUMBER		309

STATION NUMBER 240217 HUNGRY HORSE RS 1958-1970

MONTH AUG

WIND SPEED 0-4 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100		3								
95-99		5								
90-94	3	33	5							
85-89		41	26	5						
80-84		28	36	3						
75-79		15	26	15	0					
70-74			15	0	15	10	8	3		
65-69			0	10	8	0		3		
60-64					8	0	5	5	10	
55-59					5		3	8	5	3
50-54							3	3	3	
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	3	128	115	41	43	26	18	20	10	3
NUMBER	1	50	45	16	17	10	7	0	7	1

WIND SPEED 5-9 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100	3									
95-99	8	10								
90-94		51	5							
85-89	0	36	26	3						
80-84	3	31	46	10						
75-79		10	36	20						
70-74		10	15	15	8					
65-69			5	20	10	0		3		
60-64				5	5	8	5		3	
55-59					5	8	3	5		
50-54						5		3	3	5
45-49									3	
40-44										
35-39										
30-34										
<30										
TOTAL	20	148	133	74	28	28	8	10	0	5
NUMBER	0	50	52	29	11	11	3	4	3	2

WIND SPEED 10-14 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94	3	10	3							
85-89	3	15	3							
80-84		13	10	5						
75-79							3			
70-74			5	3	3					
65-69				5				5		
60-64				5		10				
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	5	30	20	10	3	10	3	5		
NUMBER	2	15	0	7	1	4	1	2	0	0

WIND SPEED 15-19 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100		3								
95-99										
90-94										
85-89										
80-84		10	3							
75-79										
70-74										
65-69			3							
60-64				3						
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL		13	5	3						
NUMBER	0	5	2	1	0	0	0	0	0	0

WIND SPEED GREATER/EQUAL 20 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89										
80-84										
75-79										
70-74										
65-69										
60-64										
55-59										
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL										
NUMBER	0	0	0	0	0	0	0	0	0	0

TEMP. DEG F	TOTAL	NUMBER
<100	0	3
95-99	23	9
90-94	113	44
85-89	166	65
80-84	197	77
75-79	133	52
70-74	118	46
65-69	95	37
60-64	79	31
55-59	43	17
50-54	23	9
45-49	3	1
40-44		0
35-39		0
30-34		0
<30		0
TOTAL	1000	
NUMBER		391

(con.)

Table 36. (Con.)

TEMPFRATURF - RFLATIVE HUMIOITY - WINOSPEEO
PFRCENTAGE FREQUFNCY OF OCCURRENCE FOR SELECTEO COMBINATIONS
-GIVFN TO TFNTHS PERCENT, OECIMAL POINT OMITTEO

STATION NUMBER 240301 BELLY RIVER RS 1951-1970

MONTH JUL

WINO SPEEO 0-4 MPH — RELATIVE HUMIOITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89										
80-84			3	3	2		2			
75-79			7	16	7	5	2			
70-74				9	9	7	7			
65-69				5	7	5	2	5		
60-64					2	5	3	3	3	
55-59					2	3	2	10	9	
50-54								2	3	5
45-49									2	3
40-44										
35-39										
30-34										
<30										
TOTAL			10	33	28	26	17	21	17	9
NUMBER	0	0	6	19	16	15	10	12	10	5

WINO SPEEO 5-9 MPH — RELATIVE HUMIOITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89			10							
80-84			24	16	2					
75-79		3	40	52	16					
70-74			14	35	28	12	3			
65-69			5	23	24	14	7			
60-64				2	7	12	10	5		
55-59					2	3	7	7	2	2
50-54							5	5	10	
45-49								2	2	
40-44								2		
35-39										
30-34										
<30										
TOTAL		3	94	127	78	42	33	21	14	2
NUMBER	0	2	54	73	45	24	19	12	8	1

WINO SPEEO 10-14 MPH — RELATIVE HUMIOITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94		3	3							
85-89		5	3	2						
80-84		3	31	9						
75-79			42	36	5	3				
70-74		5	10	26	12	5				
65-69			9	28	12	5	2			
60-64				5	10	3	2	2		
55-59					7	5	9		3	
50-54							2	2	2	
45-49								2		
40-44								2		
35-39										
30-34										
<30										
TOTAL		17	99	106	47	23	14	7	5	
NUMBER	0	10	57	61	27	13	8	4	3	0

WINO SPEEO 15-19 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89										
80-84			5	3						
75-79		3	3	5						
70-74		2	2	7	2					
65-69				7	3					
60-64				5	2	5		2		
55-59					5	3	3	2		
50-54						5	2	2		
45-49								2		
40-44										
35-39										
30-34										
<30										
TOTAL		5	10	28	12	14	5	7		
NUMBER	0	3	6	16	7	8	3	4	0	0

WIND SPEEO GREATER/EQUAL 20 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89										
80-84			2							
75-79	2	2	3		2					
70-74		2	2	2		2				
65-69					3					
60-64					3					
55-59					2					
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	2	3	7	2	10	2				
NUMBER	1	2	4	1	6	1	0	0	0	0

TEMP. DEG F	TOTAL	NUMBER
<100		0
95-99		0
90-94	7	4
85-89	21	12
80-84	106	61
75-79	255	147
70-74	201	116
65-69	167	96
60-64	94	54
55-59	89	51
50-54	45	26
45-49	12	7
40-44	3	2
35-39		0
30-34		0
<30		0
TOTAL	1000	
NUMBER		576

STATION NUMBER 240301 BELLY RIVER RS 1951-1970

MONTH AUG

WINO SPEEO 0-4 MPH — RELATIVE HUMIOITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89		2		2						
80-84		3	5	3						
75-79		2	8	7	5	2				
70-74		2	3	7	12	8				
65-69				3	7	12	3	2	2	
60-64				3	5	5	3	10	3	
55-59						2		5	12	3
50-54					2	2		10	5	3
45-49								2	3	12
40-44										3
35-39										2
30-34										
<30										
TOTAL		8	17	25	30	30	7	28	25	23
NUMBER	0	5	10	15	18	18	4	17	15	14

WINO SPEEO 5-9 MPH — RELATIVE HUMIOITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99	2									
90-94		7								
85-89		7	5	2						
80-84		13	32	8						
75-79		10	45	18	7					
70-74		3	20	38	18	3				
65-69			7	13	25	7	3			
60-64			3	5	13	18	3	3	3	
55-59					3	10	10	2	2	2
50-54						5	5	2	3	
45-49					2			5	2	3
40-44										2
35-39										
30-34										
<30										
TOTAL	2	40	112	85	68	43	22	12	10	7
NUMBER	1	24	67	51	41	26	13	7	6	4

WINO SPEEO 10-14 MPH — RELATIVE HUMIOIIY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89		7	5							
80-84		8	18	3						
75-79		3	32	15	3					
70-74			33	20	5	3				
65-69			12	13	12	2				
60-64				10	18	10	2			
55-59					2	8	7	2		
50-54						5	8		2	
45-49							3	2		
40-44										2
35-39										
30-34										
<30										
TOTAL		18	100	62	40	28	20	3	2	2
NUMBER	0	11	60	37	24	17	12	2	1	1

WINO SPEEO 15-19 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89		2	2							
80-84		3	8							
75-79			15	2						
70-74		3	5	3	5					
65-69			3	5	3					
60-64				8	8	2				
55-59				2	3	2	3	3		
50-54					2	3		5		
45-49							3	2		
40-44										
35-39										
30-34										
<30										
TOTAL		8	33	20	22	7	7	10		
NUMBER	0	5	20	12	13	4	4	6	0	0

WINO SPEED GREATER/EQUAL 20 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89		2								
80-84			2							
75-79			3							
70-74			2	2	2					
65-69										
60-64				2						
55-59					3	2				
50-54								2		
45-49						3				
40-44										
35-39										
30-34										
<30										
TOTAL		2	7	3	5	5		2		
NUMBER	0	1	4	2	3	3	0	1	0	0

TEMP. DEG F	TOTAL	NUMBER
<100		0
95-99	2	1
90-94	7	4
05-89	33	20
80-84	109	65
75-79	177	106
70-74	199	119
65-69	134	80
60-64	140	84
55-59	87	52
50-54	63	38
45-49	42	25
40-44	7	4
35-39	2	1
30-34		0
<30		0
TOTAL	1000	
NUMBER		599

(con.)

Table 36. (Con.)

TEMPERATURE - RELATIVE HUMIDITY - WINDSPEED
PERCENTAGE FREQUENCY OF OCCURRENCE FOR SELECTED COMBINATIONS
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240303 ST MARY RS 1951-1970

MONTH JUL

WIND SPEED 0-4 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89		2	18							
80-84	2	4	6	8		2				
75-79		2	0	4	6					
70-74		2		8	8	0				
65-69			2		8	4	6		2	
60-64						4	2	2	4	
55-59						8	4	2	4	
50-54								4	6	
45-49									2	
40-44										
35-39										
30-34										
<30										
TOTAL	2	18	26	20	22	26	12	8	10	
NUMBER	1	5	13	18	11	13	6	4	9	8

WIND SPEED 5-9 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99	2	2								
90-94		18								
85-89		34	4	2						
80-84		10	42	26						
75-79		0	32	44	12	2				
70-74			10	36	30	6		2		
65-69			6	16	8	16	6			
60-64			2		14	8	4	2		
55-59					4			4	2	4
50-54						2	2	2	6	4
45-49										2
40-44										
35-39										
30-34										
<30										
TOTAL	2	65	105	125	69	34	12	10	8	18
NUMBER	1	32	52	62	34	17	6	5	4	5

WIND SPEED 10-14 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94		4	2							
85-89		14	12							
80-84	2	16	34	2	2					
75-79		12	44	16	4					
70-74		6	24	28	6	2				
65-69			6	12	10	4				
60-64				12	18	6	0		2	
55-59				2		6	14			
50-54				2	2					
45-49										
40-44								2		
35-39										
30-34										
<30										
TOTAL	2	52	123	67	34	10	22	2	2	
NUMBER	1	26	61	33	17	9	11	1	1	0

WIND SPEED 15-19 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89			2							
80-84	2	2	6		2					
75-79			4	2	4	2				
70-74		4	2	4		2				
65-69				4	4					
60-64				2	4	2				
55-59					4	4	4	2		
50-54							2			
45-49							2			
40-44									2	
35-39										
30-34										
<30										
TOTAL	2	6	14	12	18	10	8	2	2	
NUMBER	1	3	7	6	9	5	4	1	1	0

WIND SPEED GREATER/EQUAL 20 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100	2									
95-99										
90-94										
85-89										
80-84										
75-79		2								
70-74			2	2	2					
65-69					2					
60-64										
55-59					2	2				
50-54							2			
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL	2	2	2	2	6	2	2			
NUMBER	1	1	1	1	3	1	1	0	8	8

TEMP. DEG F	TOTAL	NUMBER
<100	2	1
95-99	4	2
90-94	16	0
85-89	01	48
80-84	169	04
75-79	210	104
70-74	196	97
65-69	117	58
60-64	89	44
55-59	73	36
50-54	34	17
45-49	6	3
40-44	4	2
35-39		8
30-34		0
<30		8
TOTAL	1880	
NUMBER		496

STATION NUMBER 240303 ST MARY RS 1951-1978

MONTH AUG

WIND SPEED 0-4 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99	2									
90-94										
85-89		6								
80-84		6	10	2						
75-79			2	8	2					
70-74			2	8	6	2				
65-69			6	6	4	0	2	4		
60-64					6	4		2	6	
55-59					2	2	2		4	2
50-54								6	10	2
45-49									6	2
40-44										2
35-39										
30-34										
<30										
TOTAL	2	11	19	23	19	15	4	11	25	8
NUMBER	1	6	10	12	18	8	2	6	13	4

WIND SPEED 5-9 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99		2								
90-94	2	2								
85-89		21	18							
80-84		19	30	23						
75-79	2	8	42	29	4	2				
70-74			13	27	13					
65-69			4	17	11	10				
60-64			4	4	18	0	0	2		
55-59			2		2	6	2	4	2	
50-54						4	6	4	6	
45-49						2	2	2	4	2
40-44								2		
35-39										2
30-34										
<30										
TOTAL	4	52	113	99	48	31	17	13	11	4
NUMBER	2	27	59	52	21	16	9	7	6	2

WIND SPEED 10-14 MPH — RELATIVE HUMIDITY

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94		8								
85-89		15	10							
80-84		15	34	8						
75-79		15	46	13	4					
70-74			27	31	10	2				
65-69			0	17	8	0				
60-64				4	13	19	6	4		
55-59				2	4	2	2	2	4	
50-54					2	4	8			
45-49							4		2	
40-44										
35-39										
30-34										
<30										
TOTAL		54	124	75	40	34	19	6	6	
NUMBER	0	28	65	39	21	18	18	3	3	0

WIND SPEED 15-19 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89			2	2						
80-84		2	6							
75-79	2	2	4	6	2	2				
70-74			11	4						
65-69			4	2	15					
60-64					18	6				
55-59				2	4	4	2			
50-54					2	2	2			
45-49						2	2	2		
40-44										
35-39										
30-34										
<30										
TOTAL	2	4	27	15	33	15	6	2		
NUMBER	1	2	14	8	17	8	3	1	0	8

WIND SPEED GREATER/EQUAL 20 MPH

TEMP. DEG F	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100										
95-99										
90-94										
85-89										
80-84		2								
75-79			2							
70-74		2		2						
65-69										
60-64				4	4					
55-59							2			
50-54										
45-49										
40-44										
35-39										
30-34										
<30										
TOTAL		4	2	6	4		2			
NUMBER	0	2	1	3	2	0	1	8	0	8

TEMP. DEG F	TOTAL	NUMBER
<100		8
95-99	4	2
90-94	11	6
85-89	65	34
80-84	164	86
75-79	195	102
70-74	159	03
65-69	132	69
60-64	120	63
55-59	57	38
50-54	55	29
45-49	31	16
40-44	4	2
35-39	2	1
30-34		0
<30		8
TOTAL	1888	
NUMBER		523

(con.)

Table 36. (Con.)

TEMPERATURE - RELATIVE HUMIDITY - WINDSPEED
PERCENTAGE FREQUENCY OF OCCURRENCE FOR SELECTED COMBINATIONS
-GIVEN TO TENTHS PERCENT, DECIMAL POINT OMITTED

STATION NUMBER 240206 DESERT MTN 1951-1970

MONTH JUL

TEMP. DEG F	WIND SPEED 0-4 MPH, RELATIVE HUMIDITY										WIND SPEED 5-9 MPH, RELATIVE HUMIDITY										WIND SPEED 10-14 MPH, RELATIVE HUMIDITY									
	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100																														
95-99																														
90-94																														
85-89		2	2									2																		
80-84		2	2	3								2	17	3																
75-79		3	26	10	2	2					2	10	58	20	7							3	9	2						
70-74		3	27	41	15							10	41	55	14	2						2	12	3	2					
65-69			14	19	19	7	5					3	19	39	27	10						3	2	7	2					
60-64			2	14	27	17	5	5					9	29	19	19	7						3	3	2					
55-59				2		10	7			2			3	5	12	26	5	3	2	2				2	2	2				
50-54						2	9	5	2	3					2	7	12	5	3	2						3		3	2	
45-49					2	3		9	10	5					2	2	5		5	10						2		2	2	
40-44										12								3	2	7								3		2
35-39																			2	2										
30-34										2										2										
<30																														
TOTAL		10	72	89	65	41	26	19	12	24	2	27	147	152	82	65	29	12	14	24		9	26	17	7	7		9	3	2
NUMBER	0	6	42	52	38	24	15	11	7	14	1	16	86	89	48	38	17	7	8	14	0	5	15	10	4	4	0	5	2	1

TEMP. DEG F	WIND SPEED 15-19 MPH										WIND SPEED GREATER/EQUAL 20 MPH										TOTAL	NUMBER
	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100		
<100																						0
95-99																						0
90-94																						0
85-89																					5	3
80-84																					29	17
75-79		2	2																		157	92
70-74			3																		230	135
65-69																					175	103
60-64																2					162	95
55-59					2										2				2		89	52
50-54																					60	35
45-49																					58	34
40-44																					29	17
35-39																					3	2
30-34																					3	2
<30																						0
TOTAL		2	5		2										2	2			2		1000	
NUMBER	0	1	3	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0		587

STATION NUMBER 240206 DESERT MTN 1951-1970

MONTH AUG

TEMP. DEG F	WIND SPEED 0-4 MPH, RELATIVE HUMIDITY										WIND SPEED 5-9 MPH, RELATIVE HUMIDITY										WIND SPEED 10-14 MPH, RELATIVE HUMIDITY									
	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100
<100																														
95-99																														
90-94												2																		
85-89		2										5																		
80-84		3	5	2								21	9	3								10	2							
75-79		7	12	3								14	44	7	2							2	10							
70-74		2	27	15	5	2						19	50	27	7								12	3						
65-69			10	27	15	14					2	5	44	32	21	5	2					3	12	7	3	2				
60-64		2	2	15	24	7	5	2	2				14	39	14	14	3	2					2	2	3					
55-59				9	9	9	5	3	2					17	14	14	2	2	3					2				3		
50-54				2	3	3	7	9	7	12			2		7	9	5	5	2	3						2		3	2	
45-49					2	5	5	2	9	7							7	3	5	14							2	2	2	2
40-44								5	3	9								9	3	15										3
35-39										3									2	9										3
30-34																														
<30																														
TOTAL		15	56	74	58	39	22	21	22	31	2	65	162	126	63	41	19	21	15	41		15	38	14	7	3	2	9	3	9
NUMBER	0	9	33	43	34	23	13	12	13	18	1	38	95	74	37	24	11	12	9	24	0	9	22	8	4	2	1	5	2	5

TEMP. DEG F	WIND SPEED 15-19 MPH										WIND SPEED GREATER/EQUAL 20 MPH										TOTAL	NUMBER
	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100	1 TO 10	11 TO 20	21 TO 30	31 TO 40	41 TO 50	51 TO 60	61 TO 70	71 TO 80	81 TO 90	91 TO 100		
<100																						0
95-99																						0
90-94																					2	1
85-89																					7	4
80-84																					55	32
75-79																					101	59
70-74				2																	171	100
65-69																					205	120
60-64					2	2															154	90
55-59																					92	54
50-54																					82	48
45-49																					65	38
40-44								2													50	29
35-39																					17	10
30-34																						0
<30																						0
TOTAL				2	2	2		2													1000	
NUMBER	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0		585

Finklin, Arnold I. A climatic handbook for Glacier National Park—with data for Waterton Lakes National Park. General Technical Report INT-204. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1986. 124 p.

A climatic description of the Glacier-Waterton Lakes Park area; mainly covers Glacier. Contains numerous tables, graphs, and maps showing the year-round pattern of climatic elements and 10-day details during fire season. Data analysis includes frequency distributions in addition to average values. Examines relationship of averages to topography, weather correlations between stations, persistence of weather, and climatic trends during this century.

KEYWORDS: climate, mountain climatology, fire-weather, fire management, Glacier National Park

INTERMOUNTAIN RESEARCH STATION

The Intermountain Research Station provides scientific knowledge and technology to improve management, protection, and use of the forests and rangelands of the Intermountain West. Research is designed to meet the needs of National Forest managers, Federal and State agencies, industry, academic institutions, public and private organizations, and individuals. Results of research are made available through publications, symposia, workshops, training sessions, and personal contacts.

The Intermountain Research Station territory includes Montana, Idaho, Utah, Nevada, and western Wyoming. Eighty-five percent of the lands in the Station area, about 231 million acres, are classified as forest or rangeland. They include grasslands, deserts, shrublands, alpine areas, and forests. They provide fiber for forest industries, minerals and fossil fuels for energy and industrial development, water for domestic and industrial consumption, forage for livestock and wildlife, and recreation opportunities for millions of visitors.

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Bozeman, Montana (in cooperation with Montana State University)

Logan, Utah (in cooperation with Utah State University)

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